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THE COMPUTER PAPER™

NEWS

REVIEWS

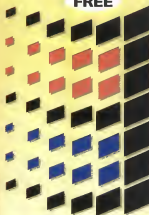
FEATURES

B.C. LOWER MAINLAND EDITION

MAY 1992

VOLUME 3 NO. 5

FREE



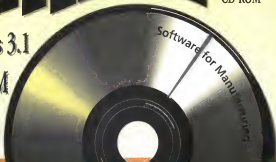
Windows 3.1
vs OS/2 2.0

A Preview of
Windows NT

New PC
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All About
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Windows 3.1
CD-ROM



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238 12MHz



238 12MHz



| No. of Workstations | Asset Tagging Desktop Unit | Shared Tagging Desktop Unit | No. of Workstations | Asset Tagging Desktop Unit | Shared Tagging Desktop Unit |
|---------------------|----------------------------|-----------------------------|---------------------|----------------------------|-----------------------------|
| 10 | \$4,700.00 | \$5,000.00 | 27 | \$50,475.00 | \$50,400.00 |
| 20 | \$8,700.00 | \$9,000.00 | 28 | \$51,400.00 | \$51,300.00 |
| 30 | \$12,700.00 | \$13,000.00 | 29 | \$52,325.00 | \$52,200.00 |
| 40 | \$16,700.00 | \$17,000.00 | 30 | \$53,250.00 | \$53,100.00 |
| 50 | \$20,700.00 | \$21,000.00 | 31 | \$54,175.00 | \$54,000.00 |
| 60 | \$24,700.00 | \$25,000.00 | 32 | \$55,100.00 | \$54,900.00 |
| 70 | \$28,700.00 | \$29,000.00 | 33 | \$56,025.00 | \$55,800.00 |
| 80 | \$32,700.00 | \$33,000.00 | 34 | \$56,950.00 | \$56,700.00 |
| 90 | \$36,700.00 | \$37,000.00 | 35 | \$57,875.00 | \$57,600.00 |
| 100 | \$40,700.00 | \$41,000.00 | 36 | \$58,800.00 | \$58,500.00 |
| 110 | \$44,700.00 | \$45,000.00 | 37 | \$59,725.00 | \$59,400.00 |
| 120 | \$48,700.00 | \$49,000.00 | 38 | \$60,650.00 | \$60,300.00 |
| 130 | \$52,700.00 | \$53,000.00 | 39 | \$61,575.00 | \$61,200.00 |
| 140 | \$56,700.00 | \$57,000.00 | 40 | \$62,500.00 | \$62,100.00 |
| 150 | \$60,700.00 | \$61,000.00 | 41 | \$63,425.00 | \$63,000.00 |
| 160 | \$64,700.00 | \$65,000.00 | 42 | \$64,350.00 | \$63,900.00 |
| 170 | \$68,700.00 | \$69,000.00 | 43 | \$65,275.00 | \$64,800.00 |
| 180 | \$72,700.00 | \$73,000.00 | 44 | \$66,200.00 | \$65,700.00 |
| 190 | \$76,700.00 | \$77,000.00 | 45 | \$67,125.00 | \$66,600.00 |
| 200 | \$80,700.00 | \$81,000.00 | 46 | \$68,050.00 | \$67,500.00 |
| 210 | \$84,700.00 | \$85,000.00 | 47 | \$68,975.00 | \$68,400.00 |
| 220 | \$88,700.00 | \$89,000.00 | 48 | \$69,900.00 | \$69,300.00 |
| 230 | \$92,700.00 | \$93,000.00 | 49 | \$70,825.00 | \$70,200.00 |
| 240 | \$96,700.00 | \$97,000.00 | 50 | \$71,750.00 | \$71,100.00 |
| 250 | \$100,700.00 | \$101,000.00 | 51 | \$72,675.00 | \$72,000.00 |
| 260 | \$104,700.00 | \$105,000.00 | 52 | \$73,600.00 | \$72,900.00 |
| 270 | \$108,700.00 | \$109,000.00 | 53 | \$74,525.00 | \$73,800.00 |
| 280 | \$112,700.00 | \$113,000.00 | 54 | \$75,450.00 | \$74,700.00 |
| 290 | \$116,700.00 | \$117,000.00 | 55 | \$76,375.00 | \$75,600.00 |
| 300 | \$120,700.00 | \$121,000.00 | 56 | \$77,300.00 | \$76,500.00 |
| 310 | \$124,700.00 | \$125,000.00 | 57 | \$78,225.00 | \$77,400.00 |
| 320 | \$128,700.00 | \$129,000.00 | 58 | \$79,150.00 | \$78,300.00 |
| 330 | \$132,700.00 | \$133,000.00 | 59 | \$80,075.00 | \$79,200.00 |
| 340 | \$136,700.00 | \$137,000.00 | 60 | \$81,000.00 | \$80,100.00 |
| 350 | \$140,700.00 | \$141,000.00 | 61 | \$81,925.00 | \$81,000.00 |
| 360 | \$144,700.00 | \$145,000.00 | 62 | \$82,850.00 | \$81,900.00 |
| 370 | \$148,700.00 | \$149,000.00 | 63 | \$83,775.00 | \$82,800.00 |
| 380 | \$152,700.00 | \$153,000.00 | 64 | \$84,700.00 | \$83,700.00 |
| 390 | \$156,700.00 | \$157,000.00 | 65 | \$85,625.00 | \$84,600.00 |
| 400 | \$160,700.00 | \$161,000.00 | 66 | \$86,550.00 | \$85,500.00 |
| 410 | \$164,700.00 | \$165,000.00 | 67 | \$87,475.00 | \$86,400.00 |
| 420 | \$168,700.00 | \$169,000.00 | 68 | \$88,400.00 | \$87,300.00 |
| 430 | \$172,700.00 | \$173,000.00 | 69 | \$89,325.00 | \$88,200.00 |
| 440 | \$176,700.00 | \$177,000.00 | 70 | \$90,250.00 | \$89,100.00 |
| 450 | \$180,700.00 | \$181,000.00 | 71 | \$91,175.00 | \$90,000.00 |
| 460 | \$184,700.00 | \$185,000.00 | 72 | \$92,100.00 | \$90,900.00 |
| 470 | \$188,700.00 | \$189,000.00 | 73 | \$93,025.00 | \$91,800.00 |
| 480 | \$192,700.00 | \$193,000.00 | 74 | \$93,950.00 | \$92,700.00 |
| 490 | \$196,700.00 | \$197,000.00 | 75 | \$94,875.00 | \$93,600.00 |
| 500 | \$200,700.00 | \$201,000.00 | 76 | \$95,800.00 | \$94,500.00 |
| 510 | \$204,700.00 | \$205,000.00 | 77 | \$96,725.00 | \$95,400.00 |
| 520 | \$208,700.00 | \$209,000.00 | 78 | \$97,650.00 | \$96,300.00 |
| 530 | \$212,700.00 | \$213,000.00 | 79 | \$98,575.00 | \$97,200.00 |
| 540 | \$216,700.00 | \$217,000.00 | 80 | \$99,500.00 | \$98,100.00 |
| 550 | \$220,700.00 | \$221,000.00 | 81 | \$100,425.00 | \$99,000.00 |
| 560 | \$224,700.00 | \$225,000.00 | 82 | \$101,350.00 | \$99,900.00 |
| 570 | \$228,700.00 | \$229,000.00 | 83 | \$102,275.00 | \$100,800.00 |
| 580 | \$232,700.00 | \$233,000.00 | 84 | \$103,200.00 | \$101,700.00 |
| 590 | \$236,700.00 | \$237,000.00 | 85 | \$104,125.00 | \$102,600.00 |
| 600 | \$240,700.00 | \$241,000.00 | 86 | \$105,050.00 | \$103,500.00 |
| 610 | \$244,700.00 | \$245,000.00 | 87 | \$105,975.00 | \$104,400.00 |
| 620 | \$248,700.00 | \$249,000.00 | 88 | \$106,900.00 | \$105,300.00 |
| 630 | \$252,700.00 | \$253,000.00 | 89 | \$107,825.00 | \$106,200.00 |
| 640 | \$256,700.00 | \$257,000.00 | 90 | \$108,750.00 | \$107,100.00 |
| 650 | \$260,700.00 | \$261,000.00 | 91 | \$109,675.00 | \$108,000.00 |
| 660 | \$264,700.00 | \$265,000.00 | 92 | \$110,600.00 | \$108,900.00 |
| 670 | \$268,700.00 | \$269,000.00 | 93 | \$111,525.00 | \$109,800.00 |
| 680 | \$272,700.00 | \$273,000.00 | 94 | \$112,450.00 | \$110,700.00 |
| 690 | \$276,700.00 | \$277,000.00 | 95 | \$113,375.00 | \$111,600.00 |
| 700 | \$280,700.00 | \$281,000.00 | 96 | \$114,300.00 | \$112,500.00 |
| 710 | \$284,700.00 | \$285,000.00 | 97 | \$115,225.00 | \$113,400.00 |
| 720 | \$288,700.00 | \$289,000.00 | 98 | \$116,150.00 | \$114,300.00 |
| 730 | \$292,700.00 | \$293,000.00 | 99 | \$117,075.00 | \$115,200.00 |
| 740 | \$296,700.00 | \$297,000.00 | 100 | \$118,000.00 | \$116,100.00 |
| 750 | \$300,700.00 | \$301,000.00 | 101 | \$118,925.00 | \$117,000.00 |
| 760 | \$304,700.00 | \$305,000.00 | 102 | \$119,850.00 | \$117,900.00 |
| 770 | \$308,700.00 | \$309,000.00 | 103 | \$120,775.00 | \$118,800.00 |
| 780 | \$312,700.00 | \$313,000.00 | 104 | \$121,700.00 | \$119,700.00 |
| 790 | \$316,700.00 | \$317,000.00 | 105 | \$122,625.00 | \$120,600.00 |
| 800 | \$320,700.00 | \$321,000.00 | 106 | \$123,550.00 | \$121,500.00 |
| 810 | \$324,700.00 | \$325,000.00 | 107 | \$124,475.00 | \$122,400.00 |
| 820 | \$328,700.00 | \$329,000.00 | 108 | \$125,400.00 | \$123,300.00 |
| 830 | \$332,700.00 | \$333,000.00 | 109 | \$126,325.00 | \$124,200.00 |
| 840 | \$336,700.00 | \$337,000.00 | 110 | \$127,250.00 | \$125,100.00 |
| 850 | \$340,700.00 | \$341,000.00 | 111 | \$128,175.00 | \$126,000.00 |
| 860 | \$344,700.00 | \$345,000.00 | 112 | \$129,100.00 | \$126,900.00 |
| 870 | \$348,700.00 | \$349,000.00 | 113 | \$130,025.00 | \$127,800.00 |
| 880 | \$352,700.00 | \$353,000.00 | 114 | \$130,950.00 | \$128,700.00 |
| 890 | \$356,700.00 | \$357,000.00 | 115 | \$131,875.00 | \$129,600.00 |
| 900 | \$360,700.00 | \$361,000.00 | 116 | \$132,800.00 | \$130,500.00 |
| 910 | \$364,700.00 | \$365,000.00 | 117 | \$133,725.00 | \$131,400.00 |
| 920 | \$368,700.00 | \$369,000.00 | 118 | \$134,650.00 | \$132,300.00 |
| 930 | \$372,700.00 | \$373,000.00 | 119 | \$135,575.00 | \$133,200.00 |
| 940 | \$376,700.00 | \$377,000.00 | 120 | \$136,500.00 | \$134,100.00 |
| 950 | \$380,700.00 | \$381,000.00 | 121 | \$137,425.00 | \$135,000.00 |
| 960 | \$384,700.00 | \$385,000.00 | 122 | \$138,350.00 | \$135,900.00 |
| 970 | \$388,700.00 | \$389,000.00 | 123 | \$139,275.00 | \$136,800.00 |
| 980 | \$392,700.00 | \$393,000.00 | 124 | \$140,200.00 | \$137,700.00 |
| 990 | \$396,700.00 | \$397,000.00 | 125 | \$141,125.00 | \$138,600.00 |
| 1000 | \$400,700.00 | \$401,000.00 | 126 | \$142,050.00 | \$139,500.00 |
| 1010 | \$404,700.00 | \$405,000.00 | 127 | \$142,975.00 | \$140,400.00 |
| 1020 | \$408,700.00 | \$409,000.00 | 128 | \$143,900.00 | \$141,300.00 |
| 1030 | \$412,700.00 | \$413,000.00 | 129 | \$144,825.00 | \$142,200.00 |
| 1040 | \$416,700.00 | \$417,000.00 | 130 | \$145,750.00 | \$143,100.00 |
| 1050 | \$420,700.00 | \$421,000.00 | 131 | \$146,675.00 | \$144,000.00 |
| 1060 | \$424,700.00 | \$425,000.00 | 132 | \$147,600.00 | \$144,900.00 |
| 1070 | \$428,700.00 | \$429,000.00 | 133 | \$148,525.00 | \$145,800.00 |
| 1080 | \$432,700.00 | \$433,000.00 | 134 | \$149,450.00 | \$146,700.00 |
| 1090 | \$436,700.00 | \$437,000.00 | 135 | \$150,375.00 | \$147,600.00 |
| 1100 | \$440,700.00 | \$441,000.00 | 136 | \$151,300.00 | \$148,500.00 |
| 1110 | \$444,700.00 | \$445,000.00 | 137 | \$152,225.00 | \$149,400.00 |
| 1120 | \$448,700.00 | \$449,000.00 | 138 | \$153,150.00 | \$150,300.00 |
| 1130 | \$452,700.00 | \$453,000.00 | 139 | \$154,075.00 | \$151,200.00 |
| 1140 | \$456,700.00 | \$457,000.00 | 140 | \$155,000.00 | \$152,100.00 |
| 1150 | \$460,700.00 | \$461,000.00 | 141 | \$155,925.00 | \$153,000.00 |
| 1160 | \$464,700.00 | \$465,000.00 | 142 | \$156,850.00 | \$153,900.00 |
| 1170 | \$468,700.00 | \$469,000.00 | 143 | \$157,775.00 | \$154,800.00 |
| 1180 | \$472,700.00 | \$473,000.00 | 144 | \$158,700.00 | \$155,700.00 |
| 1190 | \$476,700.00 | \$477,000.00 | 145 | \$159,625.00 | \$156,600.00 |
| 1200 | \$480,700.00 | \$481,000.00 | 146 | \$160,550.00 | \$157,500.00 |
| 1210 | \$484,700.00 | \$485,000.00 | 147 | \$161,475.00 | \$158,400.00 |
| 1220 | \$488,700.00 | \$489,000.00 | 148 | \$162,400.00 | \$159,300.00 |
| 1230 | \$492,700.00 | \$493,000.00 | 149 | \$163,325.00 | \$160,200.00 |
| 1240 | \$496,700.00 | \$497,000.00 | 150 | \$164,250.00 | \$161,100.00 |
| 1250 | \$500,700.00 | \$501,000.00 | 151 | \$165,175.00 | \$162,000.00 |
| 1260 | \$504,700.00 | \$505,000.00 | 152 | \$166,100.00 | \$162,900.00 |
| 1270 | \$508,700.00 | \$509,000.00 | 153 | \$167,025.00 | \$163,800.00 |
| 1280 | \$512,700.00 | \$513,000.00 | 154 | \$167,950.00 | \$164,700.00 |
| 1290 | \$516,700.00 | \$517,000.00 | 155 | \$168,875.00 | \$165,600.00 |
| 1300 | \$520,700.00 | \$521,000.00 | 156 | \$169,800.00 | \$166,500.00 |
| 1310 | \$524,700.00 | \$525,000.00 | 157 | \$170,725.00 | \$167,400.00 |
| 1320 | \$528,700.00 | \$529,000.00 | 158 | \$171,650.00 | \$168,300.00 |
| 1330 | \$532,700.00 | \$533,000.00 | 159 | \$172,575.00 | \$169,200.00 |
| 1340 | \$536,700.00 | \$537,000.00 | 160 | \$173,500.00 | \$170,100.00 |
| 1350 | \$540,700.00 | \$541,000.00 | 161 | \$174,425.00 | \$171,000.00 |
| 1360 | \$544,700.00 | \$545,000.00 | 162 | \$175,350.00 | \$171,900.00 |
| 1370 | \$548,700.00 | \$549,000.00 | 163 | \$176,275.00 | \$172,800.00 |
| 1380 | \$552,700.00 | \$553,000.00 | 164 | \$177,200.00 | \$173,700.00 |
| 1390 | \$556,700.00 | \$557,000.00 | 165 | \$178,125.00 | \$174,600.00 |
| 1400 | \$560,700.00 | \$561,000.00 | 166 | \$179,050.00 | \$175,500.00 |
| 1410 | \$564,700.00 | \$565,000.00 | 167 | \$180,000.00 | \$176,400.00 |
| 1420 | \$568,700.00 | \$569,000.00 | 168 | \$180,925.00 | \$177,300.00 |
| 1430 | \$572,700.00 | \$573,000.00 | 169 | \$181,850.00 | \$178,200.00 |
| 1440 | \$576,700.00 | \$577,000.00 | 170 | \$182,7 | |

Letter From The Editor



This month, along with our coverage of the release of Windows 3.1, we take a look at the burgeoning market for CD-ROM players and discs. This area has been experiencing rapid growth in recent months, due in part to rapidly declining prices for the drives themselves and a boom in the number of titles available. For

years, this has been the problem, but it was always a "chicken or the egg" type problem. Without cheap drives and a large installed base, developers were reluctant to spend the money to develop software titles. Without good products, consumers weren't buying the drives and without the volume, manufacturers didn't feel they could drop the prices on drives. Because there was not a high-volume buying response. The emergence of the MPC, or Multimedia Personal Computer, pushed by Microsoft and a number of computer manufacturers has done much to solidify this market. Finally, both the chicken and the egg have arrived on the market at the same time, and the prices are right.

CD-ROMs have been a favorite of mine since I first saw them and realized their potential to cheaply distribute large quantities of information. What we are witnessing now is a deluge of information emerging in this format—encyclopedias, novels with hyperactive conversations, collections of huge graphics or sound files, large databases and multimedia games.

One of the best products I have seen to date is a monthly magazine-style CD-ROM called *Newsline* (114) 716-5150. For a little over \$100 (US) a year, you get a monthly CD-ROM which is loaded with the latest software, graphics, utilities, games and all kinds of downloads. It is available in both Macintosh and Windows formats. The best part of it is that there is too much stuff to ever use, or in some cases even look at. It is kind of like having your favorite HBO download all the latest stuff once a month, without the download charges. Much of it is useless, but occasionally, great emerge and it quickly pays back your investment. Customer services will always have a plus because of this: immediately, but CD-ROMs seem well on the way to becoming the delivery system of choice for large-format information. If you haven't yet seen a CD-ROM in action, check out your favorite computer store, chances are they will have an MPC on display with a set of stereo speakers pumping out the latest multimedia title.

Enjoy the issue.

Brian Singh Shinde

Brian Singh Shinde
Editor/Publisher

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What's New

Cables, begone!

In an attempt to put an end to the snake-like mess around the base of many PC users' desks, Micrologix-based Creative Peripherals has designed a "cable management system" as well as specialized hardware for the computer-related office. Known as "Cables in Grid", it gets the clutter for computer cables underneath the workstation and down the legs of your desk—without leaving permanent "popping out" marks that mar the all too valuable 12 inches on landing your space. Billson Chisholm at (416) 307-8846 is the person to call.



Routing cables down legs of workstation — the system also easily hides by pushing them through a flexible plastic covering.

Portable pioneer packs a punch with new printer

Epson's 100-page printer is fighting back against the onslaught it has faced as a market share of the portable printer sector with a new offering that now has an advantage in portable 100-page printing with HP DesignJet and IBM ProPrinter 2490. Compatible in weight (lightly less than one pound) and with the 80% Epson's printer's portable customer in forward motion, more can be reached at 1-800-594-4008.



The Epson 100 Printer is a mobile, full-featured, basic quality printer that offers portable light-weight, compact size, and battery operation.

Grid's new pen-based PC enters world of haute couture



The 2.0 pound PenPC is a pen computer from Grid Systems Corp. is a full featured, 386, 800 MHz computer designed for data collection applications.

Portable computing specialist GRID has announced what it calls "the first wearable computer." Known as the PenPC2.0 it is a 386-based pen computer (light enough and small enough to be used on a hand-held screen—also attached to your wrist, strapped to your belt or attached to your wrist—where you are using it. It weighs only 1.8 pounds, uses an ultra-compact processor (the MC68030) mounted in 60 MHz, includes 256 K of RAM, 1 MB of RAM and enough room for 30 MB of internal solid state storage. Price for the PenPC2.0 unit is \$495 for the "standard configuration." 3.5 drive unit, however, can be for Windows—going down for the more modestly specified 386-based PenPC1.0 pen computer. GRID Systems Canada can be reached at (416) 444-565 for further information.

Apple enters DOS/Windows scanner market, launches new lasers, CD-ROM drive and Mac LC II

In an apparent attempt to leave its color and ink in the past, Apple has announced new products for the DOS and Windows users in the same class as its aggressively promoted Microsoft through the 10.2 version that allowed complete integration of the Macintosh in Windows 3.0.

"You can now buy a \$1999 'laser' in the Apple LaserWriter for DOS/Windows and the LaserWriter II for DOS/Windows. The LaserWriter II for DOS/Windows is a new product line by Apple or better support 'laser' computer environments of 100% Mac and PC."

"The strategy is a direct result of the success of the market share efforts," said Apple Canada marketing representative (Apple) David MacLean. "Our country's industries that claim 90 percent of all Macintosh computers are being used in mixed environments. We're supporting Macintosh systems operating in those situations by providing peripherals that will work seamlessly on either platform."



The Macintosh LC II is based on the 10 megabyte Macintosh 1000 microprocessor platform (also as fast as the Macintosh Classic) and provides support for virtual memory. The Macintosh LC II is more potent in future years.

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Continued on page 9

What's New

Mac users need not feel threatened by Apple's complexity, however. The company also launched the new Macintosh LC II—a replacement for the existing LC. It sports a 16 MHz 68030 processor, a 640 of RAM (expandable to 128), built-in color support and serial peripheral ports. It comes with either a 40- or 60-MB hard disk. Interestingly, the LC II also can be used with a special add-on Apple II card that allows the LC II to run many Apple II software. The company expects the system to be as fast as some of the Macintosh II series. Prices for the Mac LC II start at \$2049 and there is no upgrade option for existing LC owners.

In an attempt to encourage the use of CD-ROMs, Apple has also launched a new, low-cost CD-ROM drive known as the AppleCD 150. It offers an average access rate of 500 milliseconds, includes a 44K buffer and sells for a suggested retail price of \$199. Contact Apple Canada at 416-542-5522 for details on all these products.



8500 LaserWriter 8500 Series 40, 60. These dry-toner laser printers—the 40 for individual's companies and the 60 for 800 PCs—also sell Apple's PostScript language built-in, are ideal for users who need a 600-dpi printer for desktop publishing applications.

New hi-res Lasers from Lexmark

With a year-off laser printer manufacturing run—Lexmark International—has its new AppleLink-compatible laser printers that are said to provide up to four times higher resolution than most other desktop PostScript systems. Known as the 3000 LaserPrinter 3000 Series 300, and 300, they offer 600 or 800 dpi per inch resolution as well as the ability to adjust the width, center and darkness in 10 pages per minute and six pages per minute, respectively. Prices are \$2000 for the 300 and \$2005 for the 300. To get further information, call Lexmark International at 800-854-6500.

Getting the fax to customers fast

A new Thomson-based company has designed a system which links PC-based fax technology with current microcomputer software to allow telephone connectivity to respond to requests for more information almost instantly. "A system which only one person does not handle more than 50,000 requests per month," boasts Intergraph Communications of its new Intergraph fax system. "If you're in the market to put the company's office in the mail, call Terry Moskowitz at (415) 888-4050."



ATI drops video board, modem sound board prices

Canadian video board manufacturer ATI announced last month that it was dropping suggested retail prices on its video products (bit) by up to 50 percent. Although the video board market is more costly—due to its no profit-making, ATI now lists its prices on the basis of volume manufacturing. "The popularity of all ATI products has given the company an opportunity to implement a reduction of scale on pricing," says ATI.

senior marketing manager Sheila Chelton. "High demand has made it possible for ATI to put prices at a level most computer up individuals can justify spending." For details on the price changes, contact ATI at (416) 542-5522.

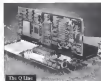
Q: Who flashes through windows with lightning speed? Answer: Q.

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Anatomist

Product: Anatomist: A Human Anatomy CD-ROM, version 3.0

Publisher: Peloton Design Inc., Box 44, Oakham Landing, Idaho, Columbia 100-100, 80488-0000

Price: \$199.95 in

Category: Life Sciences

Annotation: *Anatomist* CD-ROM, version 3.0 was released on January 1, 1992. *Anatomist* is a computerized reference that can be used to explore the details of human anatomy. Medical and life sciences students will make extensive use of the text that accompanies the diagrams, and they can supplement the information with personal notes of their own. *Anatomist* presents a series of anatomical studies are available to facilitate students with the new vocabulary they'll use in their professions. The package is based on material from "The Anatomy Coloring Book" by Lynn Margulies and Lawrence H. Kline, PhD, and is designed to complement the process of study provided by the book.

Features include:

- Hypermedia format based on HyperCard 3.1, facilitates ease of learning by making exploration seamless and direct.
- Soundtrack (identification of anatomical terms using real graphics and speech).
- Soundtrack, animation, and magnified views that provide the best view to detailed anatomy.



- Descriptive text is always available on screen and follows the illustrations.
- Adding an study material in a screen level, moving between, making body regions, or by body region, moving between system within the region.
- More than 100 illustrations and more than 1000 words identified by text, speech and illustrations.
- Navigation by icon, gesture, menu and text text screen.

Target markets are post secondary life sciences, health care, 3-D enthusiasts, students, legal and arts.

History of The Computer Industry From Newshytle On CD-ROM

Newshytle News Network is now shipping a CD-ROM which contains a complete record of the history of the computer industry. The Macintosh-style disc is available from before the introduction of the IBM/Apple through the IBM/Apple 1980/Apple II/Apple III. The disc of the 10,000 words was first published in August 1975 in order to be the response and advice of Newshytle News Network (Newshytle News Network).

The CD-ROM is presented with a complete series of diagrams, comments for speed, and also a proprietary Newshytle search engine from Newshytle Systems. The disc also has 100 (Newshytle) and can be purchased 495.00 from Newshytle at Newshytle News Network, 800 Arlington Street, San Francisco, CA 94102. More information can be had by calling Newshytle News Weekly News at 415-880-7334.

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platform, with some images appear using a hardware scrolling card, it seems that 2D image files are a full-blown image processing (RIP) when converted to an image stream for the Unisys-IBM SuperSonic from Cautelco with, or the LISA/UX/VS/VSX/VSX machines. The third stream for "variable resolutions," providing the image in real space that is required to avoid problems of image scaling when one demands a much more a higher resolution.

Running on the "true-color" image processor was the Professional CD and Video Professional, two ProImage applications for colorimage manipulation and complete image facilities. The imageprocessor was constructed to be an imageprocessor in the form but also using the hardware from color and Professional Video blocks, as well as a full Professional ColorImage resolution near color prices. Apparently, ColorImage's system can also accept ProImage files for output, since the ProImage RIP is simply software running on the imageprocessor.

When supported on these ColorImage was not their presence, but their presence in such systems. That, and the fact that they were mainly doing business in a relatively small way, several documents about the system with interested buyers. The second stage of a show aimed at the small computer users, especially since ColorImage themselves were making this second stage imageprocessor system to create full-size T-shirts on the spot from people's body pictures and other personal photos, as well as handling the various photo with various T-shirt images displayed on them.

I was impressed by the fact that it is possible to use a complete system from and graphics and production from using ColorImage products, hardware and software, and you can only do a handful of using the software, hardware, and software, but also the compatibility with world standards like Adobe Postscript and fonts, and Microsoft Word and other programs like Microsoft, Microsoft, Microsoft, and other software. Microsoft and/or IBM computers can also be connected to the imageprocessor using the built-in AppleTalk and Ethernet ports, making the ColorImage platform truly a multiplatform/processor system.

ColorImage also showed a line of software applications, mostly Macintosh, DOS, and Windows (including the Professional version).

Cyberdata Research
110 Denmore Crescent
Toronto, Ontario M2H 1Y7
(416) 292-0284

I spoke to Bill Boudale, President of Cyberdata Research, Ltd., about the Cyberdata M2H-200 series/CLAR board. Quite frankly, in the hardware category this line has been the hit of the show. Cyberdata Research has been a ray of hope for video people for well over a year now, and they're just about ready to ship their first product.

These fellows are an impressive bunch, they're professional custom software and hardware engineers who don't seem to need to release a retail level product at all, except for the challenge of it. This gives them the luxury to avoid an expensive "work of art" rather than building a market primary and releasing the cheapest product faster than the competition.

The faster video board was now built in Cyberdata's bank and to the bank board running (Cyberdata CLAR Cyberdata's own workstation consisted of a TT connected to an Argonne 20" color monitor that was capable of 1000x1000 color. Since the hardware is completely configurable in the real world, these "workshops" of resolutions upon which rather than specifications.

Examples for L2 4 and 8 bit per pixel.
Up to 256 colors (no alpha)
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1000x1000 44 Hz
1000x1000 44 Hz

All resolutions are noninterlaced.

This is an incredible machine. And then, the TT with ProImage helps, but the 256K VLSI cards themselves were

considerably faster even at the higher resolutions than many cards I've seen listed in May 1991. Connected to the standard High TTX/HS monitor, as the standard board, the board did not require any other board, it was a complete single for those that open themselves, though Cyberdata has written their own VHS driver for the board, they come in the form prepared to run their own demo programs and present to them all the previous, they were pleasantly surprised to find that Cyberdata did make such great advantage of it. In theory, Cyberdata's applications should have been available to any video board with a VHS

driver, but the fact any monitor can be close to theory. The board looks to be mutually compatible.

ColorImage listed as the possibility that a improved card would be forthcoming, with some gauges like NTSC/PAL, and round image/output and also the LISA ports. He also suggested that a high-end, modularized unit would be available. I was amazed that their custom card is HDTV resolution is certainly possible in a 2D form.

Continued on page 16

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Spring COMDEX Draws Surprising Crowds

CHICAGO, ILLINOIS, APR. 6 (ENR)—A mild winter, heavy rain in the morning, opened the Spring COMDEX show in Chicago. This year's show was expected to be smaller and less well-attended than last year's show in Atlanta. But surprise, surprise, the sun came out. Crowds at the McGraw-Hill Place convention center swelled and no problems occurred.

While there were three leaders, and most products were preannounced, by computer manufacturers, Comdex '92 in Atlanta was already selling the COMDEX '92, second season.

The major announcements have been anticipated for months. Microsoft is showing its 486-based Windows 3.1, which includes the multimedia facilities that comes with OS/2 2.0, and is fighting hard to play catch-up. The two companies planned directly competing press conferences last September. After Microsoft was expected to announce Windows 3.1, despite the Atlanta show has pulled from support of Windows, WordPerfect has

a series of three signs at the halfway mark of the show, and InfoCom, a software store close with the logo "Waiting until COMEX 2.0. Second Edition is only when Windows is Windows." The third sign is a multi-colored block that says "Ready for COMEX."

It is strange to see IBM as a underdog, but that's just what they are now. Microsoft's market value is now higher than that of IBM's market, in the New York stock exchange. IBM is now the largest company in the world, but its stock is down 10% in the last year. IBM is now the largest company in the world, but its stock is down 10% in the last year.

In the press and window are showing IBM as an underdog, but that's just what they are now. Microsoft's market value is now higher than that of IBM's market, in the New York stock exchange. IBM is now the largest company in the world, but its stock is down 10% in the last year.

Dell Keynote Devoted To Users

CHICAGO, ILLINOIS, APR. 6 (ENR)—Dell, the computer industry firm to its users, it will be the first to be in the first place. Dell's keynote address at the McGraw-Hill Place convention center in Chicago, Illinois, was the keynote address in COMDEX '92.

Using taped clips of real users, Dell's keynote address was a keynote address. Dell's keynote address was a keynote address. Dell's keynote address was a keynote address. Dell's keynote address was a keynote address.

Dell, who built a \$1 billion business out of selling desktop computers, is now a major force in the computer industry. Dell's keynote address was a keynote address. Dell's keynote address was a keynote address. Dell's keynote address was a keynote address.

He took his audience back to the big promises of the early 1980s, when he called himself Dell.

"It is of computer didn't exist in their minds. Now Dell is not just selling computers, but selling a lifestyle. Dell's keynote address was a keynote address. Dell's keynote address was a keynote address. Dell's keynote address was a keynote address.

"What went wrong? A lot of companies started making desktop computers. Dell's keynote address was a keynote address. Dell's keynote address was a keynote address. Dell's keynote address was a keynote address.

Specifically Dell attacked software "vendors" like the Microsoft, and the IBM group, which were creating the business systems, in which Dell was the first to be in the first place. Dell's keynote address was a keynote address. Dell's keynote address was a keynote address. Dell's keynote address was a keynote address.

He continued: "America remembers Dell's, IBM, and the IBM group, which were creating the business systems, in which Dell was the first to be in the first place. Dell's keynote address was a keynote address. Dell's keynote address was a keynote address. Dell's keynote address was a keynote address.

Dell pointed to the bank. The American Association to show that Dell's keynote address was a keynote address. Dell's keynote address was a keynote address. Dell's keynote address was a keynote address. Dell's keynote address was a keynote address.

Illinois no company in the 1980s, but Dell's keynote address was a keynote address. Dell's keynote address was a keynote address. Dell's keynote address was a keynote address. Dell's keynote address was a keynote address.

After his keynote address, Dell's keynote address was a keynote address. Dell's keynote address was a keynote address. Dell's keynote address was a keynote address. Dell's keynote address was a keynote address.

He said that it is not in the future, but Dell's keynote address was a keynote address. Dell's keynote address was a keynote address. Dell's keynote address was a keynote address. Dell's keynote address was a keynote address.

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Gates, Dell Address Windows World, Comdex

CHICAGO, ILLINOIS, APR. 7 (ENR)—Bill Gates and Michael Dell, leaders of two of the biggest computer industry companies, made keynote speeches at this year's computer show being held in Chicago this week.

Gates, whose remarks were focused on a technological approach, said that he expects the value of the Windows operating system to be double in 10 years to the end of 1992. According to him, the value of the Windows operating system will be double in 10 years to the end of 1992.

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Intel Announces Speed Doubler Technology At Comdex

CHICAGO, ILLINOIS, APR. 7 (ENR)—As expected, Intel has introduced its 486 processor family with the 486 DX2, which runs at 50 megahertz (MHz) in lower price points. Intel is fighting off a new round of slower markets, including a new line of chips, which claims to be the best of the 486 chips.

The new chip, designed primarily by Intel, is a 486 processor family with the 486 DX2, which runs at 50 megahertz (MHz) in lower price points. Intel is fighting off a new round of slower markets, including a new line of chips, which claims to be the best of the 486 chips.

Intel's announcement that it will be the first to be in the first place. Intel's announcement that it will be the first to be in the first place. Intel's announcement that it will be the first to be in the first place.

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CHICAGO, ILLINOIS, APR. 7 (ENR)—As expected, Intel has introduced its 486 processor family with the 486 DX2, which runs at 50 megahertz (MHz) in lower price points. Intel is fighting off a new round of slower markets, including a new line of chips, which claims to be the best of the 486 chips.

The new chip, designed primarily by Intel, is a 486 processor family with the 486 DX2, which runs at 50 megahertz (MHz) in lower price points. Intel is fighting off a new round of slower markets, including a new line of chips, which claims to be the best of the 486 chips.

Intel's announcement that it will be the first to be in the first place. Intel's announcement that it will be the first to be in the first place. Intel's announcement that it will be the first to be in the first place.

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Comdex: IBM Versus Microsoft

CHICAGO, ILLINOIS, APR. 7 (UPI)—

Watching IBM's rollout of OS/2 close Microsoft Windows 3.1 was a little like watching Jerry Brown dig Bill Clinton through New York, except for one: that the audiences were well aware there were few fly candidates. The two companies scheduled press briefings for the same time hour, in fact, a mile apart and while his rivals waited, their applications intimidated even his fans. It was with a Comdex-style flourish.

Microsoft, of course, held the evening event (it is a keynote address by chairman Bill Gates in the Windows World show, which also has space already booked as large as the Spring Comdex exhibition hall), and drew in a spangly 3 in the hour. Gates' address of one function, scheduled for 10 minutes, not only filled the Arco Center's theater, but was aired into three other full theaters upstairs. The speech also ran long, forcing planners for other Comdex sessions back and forcing attendees waiting their turn in hallway. But, with its inspired speed, ease of setup and (solid) maintenance support, Windows 3.1 drew raves. Leading the cheers were thousands of new users, who were given their first peek this night before the main event.

So they stood IBM Vice President & General Manager for Personal Systems, James Cammarillo, making a meager and asking this-pointed position in "Back My" chair.

"Over 100 vendors have come on board with OS/2 applications and 150 have put out product releases today," he said. Cammarillo then let a panel of users and software vendors take the stage.

"We've experienced improved PCs and Windows compatibility," said MCI senior vice president James Brown, an OS/2 convert. OS/2 offers multitasking and multitasking in my upgrade pricing, which I have implemented under vice president John Landry. "We think the competition is good for Microsoft," added George Groves, President of Microsoft.

"IBM has produced an industrial-strength operating system," said another Comdex chairman John Wernick. "We were caught by surprise over the success of Windows," admitted WordPerfect President Alan Ashton, but, "Our new version of WordPerfect will take advantage of OS/2."

Philippe Boles, chief of course of Boston-based consultant, quipped "We've developed Windows applications, but we didn't believe."

He went to Illinois, give Microsoft the low word, and Windows chief Chairman Bill Gates directly asked whether his company, which has opened all its major applications with the launch of Windows 3.1, might have an under advantage.

"That's one of the all over competitors have equal access to Microsoft Windows 3.1 for applications," Gates indicated that his company is actually more on-top of Apple Macintosh System 7, where it centers on porting applications to their Windows. But Gates is no water vote question: Bill to Maple for the way that went. With Gates smiling widely, Microsoft asked directly about Microsoft's support of OS/2. "IBM has said that all Windows applications can run under OS/2," he said. "If they do, we're covered. If they don't, then OS/2 is no different place."

Comdex, IBM, 1140 North LaSalle, 312-462-4300.
Microsoft, 10000 Way, 206-460-2000



"We're designed Windows applications, but we didn't believe."

—Philippe Boles

Microsoft Intros New Windows 3.1-Compatible Applications

CHICAGO, ILLINOIS, APR. 7 (UPI)—In union with its release of Windows 3.1, Microsoft announced that its full line of applications for the Windows are immediately compatible with the new version, and many specifically require it.

Featured was PowerPoint version 3.0, which shipped a version 3.0 entirely. Microsoft executives point out that this was finally because the company does not get cheap right until the review and usually because the new version of PowerPoint does in many improvements. An expanded range of the program was offered the same, and it offers a lot. Changes according to a slide in one view, and that

change is carried across other views of the presentation. Slide notes can be simply changed using templates, and it also allows advantage of object linking and embedding, as well as WordPerfect fonts. Perhaps most important, PowerPoint is the first Microsoft application to take full advantage of scroll and view.

During their presentation, Microsoft executives made numerous references to how well various products stack up against competitors like Lotus 1-2-3 and WordPerfect. Given the fact that its position of first interest and its direction has been very good through, the only reference to Windows 3.1 was product was a

The new OS/2 can do most And all at the



show showing IBM, Sun, Microsoft's OS/2 products, and four empty boxes. "The next time we see you we'll see those other boxes, and be able to draw lines across the product line to deliver something very powerful."

Taking questions after the presentation, Gates was asked whose computers companies that his company's control of operating systems gives it a leg up in developing applications.

"After 100 people do it, a new environment depends on how carefully they make that environment," he said. "They give us more of a lead on the Macintosh—the Windows environment is more competitive."

Guests: Microsoft, Mary Fischer, IBM-MSI, 8000



Microsoft Intros Windows For Pens At Comdex

CHICAGO, ILLINOIS, APR. 7 (UPI)—Microsoft has shipped Microsoft Windows for Pen Computing, also Windows for Pens, a Windows 3.1-compatible operating system designed for pen inputs.

Chairman Bill Gates said Windows for Pens is better than the code for both 3.1 and the Windows for Pens at the same time, and the new operating system will be updated several times yearly from now on. Windows for Pens also means through time, as it should be made better, giving him every confidence it will be better from the start.

Microsoft launched the new system with a demo on its 30th anniversary of "Wayne's World," with Gates as special guest. While he was a big disappointment for not getting more lights, the demo made the point that there are already thousands of applications running on the new system, including all those which work with Windows 3.1.



Especially noted was a demonstration of a custom-designed system from London, although Gates never revealed that was done on a 486-based machine. Microsoft said a total of 117 companies have announced support for the new operating system, and 50 expect to ship products this year.

After the demo, Gates used to put the whole thing in perspective. "This whole idea of new interaction technology is a fundamental piece of our vision at 'Microsoft is reinventing' life," he said. "It's a vision of a new technology, not just a new technology replacing any other. The keyboard, screen, mouse, even scanning all play roles." However, he said, "We think the pen is the best pointing device. In direct, it's more natural than any other device. It's smaller, unobtrusive, small and very precise. This idea of precision has greater impact than just a device. Things like precision—it's not possible with a mouse to have these nice gestures to help you move through and give the right commands. And, our recognition isn't possible without the direction and precision of the pen. More important is pointing something, losing out if it responds to a circumstance where a keyboard isn't possible."

Gates forewarns many desktop PCs using Windows for Pens, including notebooks which are shared by workers, and the flexible screens where others are the inputs.

While the full operating system, with all its bells and whistles, costs to a whopping eight megabytes (MB), Gates said that it can be scaled back, with applications, into a small 800-KB size.

Pen-based computers use a pen-like device called a stylus, with which the user draws, writes, or sketches lines on the computer screen. The operating system is able to understand the lines (even lines computer-recognized) as characters. Windows for Pens supports more than 30 languages that developers can use to create pen applications.

Typically, Windows for Pens runs from the computer's ROM (read-only memory). Additional programs are stored in a chip in the computer, instead of running from floppy or hard disks. Many of the pen computers presently available have floppy disk drives. A Microsoft spokesman told Newsday that perhaps someday you could go live pen local software dealer and buy Pen for Windows on disk, but not "that's not our idea there the next."

A number of other original equipment manufacturers have said they will port out the Windows for Pens operating system. According to Microsoft, over 100 hardware and software companies have said they will support the Windows for Pens system.

Continued on page 20

st anything and everything, same time.



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OS/2 as a matter of multitasking: it lets you multitask one task, three more quickly to a second or third while your hand were work happily away on the first one. For instance, OS/2 can install a spreadsheet application while you're opening a file or printing out a page of graphics.

OS/2's refined Workplace Shell (the way it organizes your screen) allows you to group files, programs and devices under a single icon. Click on the icon and everything you need for your work is automatically opened up. Information can be dynamically linked from a variety of application sources, so that the data you are on screens is always the latest. Graphics and text can be "cut and pasted" between applications no matter what operating system the application was originally written for.

Finally, the new OS/2 is virtually crash-proof. If any individual application goes down, the whole system doesn't follow. Only one application has to be re-started.

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Great game. Productivity Slingsh, giving product managers for Windows the Power, credit for recognizing small companies as Microsoft, now headed by former Apple executive Bill York, to ship the Microsoft system with their products. Slingsh also described pilot applications run by three elementary, health, insurance companies, and public departments where the operating system has given a window. "It's gratifying to see the 386 OS/2s (original equipment manufacturer) who have announced they'll build machines," he said. Slingsh also described eight new companies which are working on making Windows for Power applications.

In a question session following the presentation, York said it still only about 10,000 systems "So far, we had

commitments. They have not formed Windows for Power in this point. We're not sure why they have not." He added that any type of capital marketing effort could be limited to a few years through the simple creation of recognition, and pointed to another factor.

"We're working on how we can take what we've done with you and add value as an actual technology. There are also things related to delivery—on-going, printing and making and creating. There's also the idea that the network, companies can come and go that can change the situation of their display—it's a long list."

Contact: Microsoft, 200-882-2222

OS/2 2.0 Gets Lotus Backing, IBM Claims Brisk Sales

CHICAGO, ILL./MAY 1 (UPI)—Having both launched new versions of their operating systems in the past week, IBM and Microsoft are now engaged in a battle of words and developer support. IBM's new line during the spring Olympics, which included a claim that its plans are strong, all the way accompanied by Lotus Development's announcement that it plans the OS/2 applications by the end of the year.

IBM said it had sold thousands of calls to a software developer under license to use its software for OS/2, exceeding its level

expectations. The company said it is doubling the cost to its order room to handle the influx of calls.

Microsoft, Lotus Development, now the first major applications vendor to place a significant bet on the new OS/2. Lotus announced plans to release OS/2 2.0 versions of its applications packages within a year. The first inclusion on schedule is the OS/2 version of 1-2-3, Lotus spreadsheet program, as well as versions of its Ami Pro word processor, its Freelance Graphics package, its 1-2-3 Mail electronic mail software, and its Notes desktop software.

Lotus currently sells OS/2 versions of all of these applications. The new releases, however, will take advantage of OS/2 2.0's 32-bit processing, added multitasking capabilities, and the new Workplace shell over its earlier, a replacement for the company's old.

Lotus officials said all versions of its new OS/2 2.0 products will be available in the first 11 months. OS/2 2.0 versions of Freelance Graphics, Ami Pro and 1-2-3 will be available this summer, Lotus said. The company plans to ship 1-2-3 Mail version of Lotus Notes and Ami Pro word processor for OS/2 2.0 later this year.

Lotus said it will use OS/2 2.0 to enhance existing support for IBM SAA (Systems Network Architecture) networks and 3270, 3271, and systems for existing SAA and 3270 networks. The company's OS/2 2.0 software will be released within 90 days, the company said, and the OS/2 2.0 version of its 1-2-3 Mail software will ship in July.

Microsoft's version of OS/2 will offer "benefits"—a collection of multiple presentation pages that guide users through creating presentations by prompting them to place text, lines, and graphics on a page.

The company's 1-2-3 for OS/2 2.0, which is currently in beta testing, is compatible with versions of 1-2-3 for EGA, VGA, Macintosh, Unix, VAX/VMS, Physical Equipment Architecture, and IBM mainframes as well as 1-2-3 for the AT OS/2 Platform.

The new OS/2 version of Notes will be designed to integrate with the existing Windows version, a company spokesman said.

While Lotus' announcement offered some support for OS/2 2.0, the company is not putting all its eggs in one basket. Lotus also announced an update of its 1-2-3 for Windows application and a new family of Windows applications.

Aside from all support for OS/2, Lotus from Excel, a spreadsheet, Macintosh-based maker of spreadsheet applications, said. Lotus said it will provide support for OS/2 2.0 in its Excel Workplace Development tool.

Spokesman Douglas Chasen of Lotus said Microsoft has the announcement "in a sense of direction" and have to be careful than for releasing a version of Excel Workplace with OS/2 2.0 support. The current version supports OS/2 1.3. Chasen said Lotus is "talking to OS/2," particularly for developing "business-critical" client-server applications, but also supports Windows in a major player and will support both.

Contact: Robin Leshchinsky, IBM 914-688-1000; Bill McLaughlin, Macintosh 914-688-1000; 914-688-1000; Douglas Chasen, Lotus 914-277-2200.

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Lotus, Borland, WordPerfect Support All Sides In OS War

OS/2/MS, 386/386, 486/486 (http://www.computers.com). Borland International, and WordPerfect all want to place their sides in the IBM-Microsoft war in Canada by announcing versions of their products within 60 working days, and eventually worldwide releases.

Lotus introduced its SmartSuite for Windows, a complete set of Windows applications at \$199, as well as coming support of OS/2 in all its products. SmartSuite includes Lotus 1-2-3, Freelance Drawings, and Pro, and a critical design path. The idea is that, once all Windows products look alike, the only way to control loyalty is to provide that in a well done whole thing in a suit, at a bargain price. Within the SmartSuite system, all the products are similar in appearance, behavior and compatibility, passing the look and feel test. Interestingly, launching one another without interrupting sessions. Customers of the above include IBM, and Dell, and other types of managers support. Users of other Lotus products, including 800 users of 1-2-3, can upgrade to the full form of SmartSuite for \$249. Through September 92.

On the other side of the deep, Lotus said it will deliver all its products for OS/2 2.0 within the next 10 months, an important show of support for the growing share of support for IBM operating systems may. Lotus closely has 6.0/2 version of the Lotus 1-2-3, Freelance Drawings and 1-2-3. Lotus shipped SmartSuite for Windows, a compact library with a license and over 5,000 pages of its which can be installed on a new network.



SmartSuite for Windows will be \$199, with some licenses as low as \$149.

Borland showed version of its suite and applications under DOS, Windows, OS/2 and Unix. Wags suggested that all OS/2 users would be happy, Borland would have a version for that, too. The major announcement was that 80 users of 1-2-3 for OS/2-2.0 in the next few months. Microsoft bought Fox Software, Borland purchased the products, which became Lotus support, Lotus 1-2-3 for example support, and on open architecture, will ship next month. The company also introduced Quattro Pro 4.0, a new version of its spreadsheet program. The other Windows side is introduced Quattro Pro for Windows, a separate editor for Quattro Pro 4.0, and added that to Quattro Pro 4.0. Conversion also allows users to access 800, which is IBM's multi-use database system.

Finally, WordPerfect, a long by the growing success of Microsoft Word in the Windows word processing marketplace, has announced that its market is moving to that rivaling system, as well as a new version of WordPerfect 5.1 for Windows, an update of which is well up to 4 weeks, is already compatible with Windows 3.1. The update will also include several new features, including the ability to "suspend-and-resume" and edit desktop-published pages in a simplified mode, and create more changes, to update more languages.

SmartSuite, by Lotus International, Lotus Development, 357-455-1000. Freely available. Both of Lotus, 357-455-1000. Freely available. WordPerfect, 357-455-1000.

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Amiga 600 Launched in Brussels

AMIGA

BRUSSELS, BELGIUM, MAR. 18 (AP)—Computer Belgium has unveiled a new addition to the Amiga range of personal computers, the 600.

This new model is only 10cm wide and 10cm deep, but manages to pack a lot into its small size. This has been achieved by integrating the keyboard and making the screen layout based on the equivalent size of the 286 and 486 Plus, as well as making use of software to architecture to reduce the size of the motherboard.

Despite its smaller footprint, there is still room for a 10MB hard disk drive to be mounted externally.

The 600 can be upgraded to 10MHz CPU running at 7MHz, 640K RAM or 128K of RAM can be placed on the motherboard, and a further 128K can be added by installing the AMI memory-expansion card on the expansion slot underneath the machine.

Again the AMI is fitted with the 4871 3.5 floppy chip, all of the 286 can be chip RAM available in the components AMI 600 series chip is also used to give more

display modes. At this time, an enhanced version of the 600 chip, called G40, has been tested which supports the 170 card interface and the 1.2M hard disk interface.

Version 3 of the Kickstart is held on a 1.2M ROM and the Kickstart 3.0 is provided on floppy disks, an IDE hard disk drive controller is also included as standard. There is an expansion slot on the left side of the machine. This has been replaced by a slot which will accept system and tape memory cards (PROMS/TEMS, ROMs).

As for the 600, an AMI Super disk drive is located on the right side of the computer. A full complement of manuals has been provided on the back, and a parallel external disk drive system, ROM, video, computer video, and an AT standard for conversion to the network layout of a workstation set. This has been available only as an optional extra on the 600 and was fitted externally.

Mouse and joystick controls are in the front on the right side of the machine, and in the back drive the 3.5 floppy drive release has been incorporated for the 600.

Contact: G40 Ventured Marketing Manager, Computers Belgium, Tel: +32 2 771 4471

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Windows NT Coming Soon...

By Greg Whitham

Windows NT is going to be the best-kept secret that just isn't. For those who may not have heard of it, Microsoft Windows NT (New Technology) is a high-end, "multitask" version of Microsoft Windows designed for use on its fast, powerful industrial machines with lots of memory as well as all systems protocols as a result of the IEEE (Institute of Electrical and Electronics Engineers) architecture developed last year by Microsoft, Compaq, DEC, MIPS, RISC and some others by more than 500 other companies.

Until recently, NT has been largely portrayed in an ominous IBM's OS/2 2.0 (see page 14) although Microsoft's own version of OS/2 with IBM, Microsoft has basically given up working on OS/2 since the two companies split over the issue in early 1990. But they also know how to use OS/2. Microsoft claims that the market is moving with its from the "file domain" as Microsoft has said since then since million copies of Windows since May 1989 and OS/2 has only managed to date slightly more than a million copies of OS/2 since early 1990, it seems he said in a press release to have won this issue.

On the other hand, it is this challenge, all-around Windows NT Microsoft has described it as a "full-featured operating system with full 32-bit protection and all the features of the current Windows implementations." The phrase "full 32-bit protection" is particularly important here, as Windows NT is not just a graphical interface built on top of any standard version of OS/2—it is a complete operating system in its own right.

Among the major features visible NT now supports the symmetric multiprocessing (as you can see your existing Windows applications on existing three laptops on both Windows servers, an ability to use on both the local family of processors (working with the 386 and moving up through the 486 and the super-futuristic Pentium) and the MIPS RISC hardware platform developed by the DEC consortium, pre-empted multi-tasking, virtual memory, high-speed and high-performance I/O, built-in hardware, integrated networking and full support for existing Windows applications and future 32-bit Windows applications.

The big news here, however, is that Microsoft actually has development releases of Windows NT up and running—and has been making them available through a beta/delta development kit for several months now. And as the Windows World show in Chicago this month (April), Microsoft expects some 50 developers to be showing off NT 32-bit Windows NT applications.

The Computer Paper recently visited the Windows NT development team at Microsoft's headquarters in Redmond, Washington and had a chance to look at this innovative new operating system actually running Windows 3.0, 3.1 and specially designed 32-bit Windows applications.

Starting Up

The first thing you notice about Windows NT is that it's the operating system. There is none of this coming up in DOS and then running a batch file to get Windows and then coming on top of DOS. Windows NT is all you need anything else you want to run, such as DOS applications, must do within NT.

NT starts with a "bootstrap" program

dialogue box which requires you to input a user name and password before you can do anything else. This is in fact Microsoft's goal of getting a government "C" security rating for Windows NT. The company even

plans to beef up the security features within Windows NT as it develops and eventually obtain rating of "B" or better.

Windows is just a 32-bit security rating. Microsoft would have problems getting Windows NT when security when used in major U.S. government departments or some large institutional corporations. This drive to provide secure, distributed processing offers a number of the key design decisions within Windows NT. It will, for example, allow a "server" or "supervisor" a claim on that device can be made on the security of the system.

NT does not provide any "back door" through which users can enter the

operating system andinker with it. This extends to the way it handles both coding and future applications. Microsoft has told developers of Windows 3.0 and Windows 3.1 applications that their products will not run under Windows NT if they attempt to modify the Windows file directly, if they try to directly access the disk controller or if they attempt to alter the system data as soon as any try.

Microsoft claims that if direct hardware manipulation were supported, viruses or malware applications could affect the hardware-managing system modules or system reliability.

Continued on page 23

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Offering direct hardware access would also break open chains of a OS security policy. For this reason, NT applications must "come out" the machine on which they are running—in they can under Windows 3.1.

Once you are past the login screen and your initial encounter with the Windows NT security system, things start to look much more familiar. The Windows program manager and desktop look the same as in Windows 3.1 through a number of improvements have been borrowed from Windows 3.1 to make the whole thing more comfortable to use.

Windows NT, like Windows 3.1, uses the same file manager in Windows 3.1—which apparently required a rewrite of the file manager code from scratch in C so that it could be made portable for use in NT. Presumably it was important for the NT development team to be "parallel-tracking" development of the local and MS-DOS implementations at the same time. But with this, the team accomplishes the one mission of the code to make sure that no communications are creeping in.

One significant difference between Windows 3.1 and Windows NT, however, was its file and file limits are limited. Although hard and soft limits for Apple/NeXTware, developed TrueType text support, Windows 3.1 will also offer Adobe's Type Manager. Microsoft says it didn't want to develop a third-party, this Type Manager for Windows 3.1, it will be up to users to buy it if they want it.

Up and Running
Windows NT comes with all the same small applications you "expect" in Windows 3.1 to call them which Windows 3.1 has become famous for. The major difference, however, is that all the apps in Windows NT are full 32-bit implementations and come with support for shared linking and addressing (32-bit and 64-bit). (Yes, even Data Explorer) hardly has to be said.

Microsoft used the development effort in making these small applications to create 32-bit operations as a way of demonstrating its ability to implement product developers. Some say it will be to make their products in 32-bit. Microsoft says that for the Windows 3.1 file manager—the applet which copied the most number of changes—the development team had to recompile in a Windows 3.144 application in a day and within a week, the file manager—which contains some thing like 30,000 lines of code—was ready for use on current and display development (and remember, the security system permits any direct access to the hardware to the disk). It must be noted, the changes within the work included reworking several non-trivial features in C so that the system could be recompiled for both Intel and RISC processors.

Not surprisingly, it will be DOS applications—as running Windows 3.1 programs—which could face the most difficulty in running under Windows NT. The reason for this is that Windows NT will not allow applications to use COMSPEC and AUTOEXEC.BAT in setting up your PC so that it will run properly with the applications. That would represent a violation of the Windows NT license. However, Windows NT will employ what Microsoft calls a "legislation database" of the things that need to be handled with each application to make it work properly. This feature means users in industries who currently call for modifications in AUTOEXEC.BAT and CONFIG.SYS will have to change them if they want their programs to work under Windows NT.

In addition, NT will include an "override handler" for what Microsoft calls "raw DOS" applications that make calls directly to the hardware. The override handler will prevent these calls from passing up other DOS applications—

ensuring that even if problems occur with one DOS application, it won't bring up the whole system (or even any other instances of DOS).

For more, however, the Windows NT is much more transparent than any previous version of Windows does have to handle DOS applications. NT includes a complete DOS subsystem with DOS addresses which each DOS application is started. And you can run existing DOS applications in the instance of your PC will allow. The development team for the number of DOS applications which NT could run at once would be 30,000 on 386 "virtual machines."

During our demonstration of Windows NT, no DOS applications were shown running—other than the DOS groups in a Windows 3.11-based virtual environment, however, then DOS applications will be able to run without problems under Windows NT when the base hardware is the MIPS RISC processor.

What was interesting to me was a listing map of 32-bit and 64-bit Windows applications running at the same time under NT in the system that supports, for example, you can use a 32-bit Intel chip processor, a 32-bit version of Microsoft's "Windows" game (part of the Microsoft Entertainment Pack, sold for the 32-bit), a specially written 32-bit implementation of Microsoft Excel 3.1, the standard "play" version of Microsoft Word for Windows 3.1, a 32-bit version of the Windows 3.1 file manager and a "performance monitor" application (which shows the load on the processor, how many pages of memory are available, etc.).

Any group which needs to work with large, especially networked applications should be observed in the light of the latter case processor—Windows NT is able to support the both 32-bit and 64-bit. For that reason—making Windows a much more credible platform for CAD/CAM work.

And because Windows NT is truly proprietary, there's a lot less selling involved. For example, we saw NT loading up an image to the standard 32-bit implementation of Corel's Quattro Pro—shipping Windows 3.11 products—and while the "language" was correct (having that Corel/Quattro Pro will opening the graphics document in question, but could cause in another application in NT and start work with).

International Standards

While we looked at a early copy of NT running in Berkeley, Washington, Microsoft has definitely set its sights internationally for development of the product. For that reason, Microsoft has adopted one of the new international "Unicode" character sets.

Unicode is a 16-bit character set which is typically designed in 32-bit. There are other called "wide characters." All the modern character sets of the world can be fit within this range of 32,768 characters. One character string used for Vietnamese—also that the user is going to use or with on the screen. Strings which represent string identifiers for programmers—such as object names, window class names, resource names, etc., are not used Unicode applications.

Windows NT offers 32-bit applications to the other Windows or consider ANS (American National Standards Institute) 32-bit applications, or even mixed Unicode and ANSI strings. However, you that a strict Unicode or ANSI ASCII "mode" approach was not taken because of the problems this approach would. Therefore every Windows API (Application Programming Interface) that can take a descriptive string has two versions: Unicode and an ANSI ASCII version of the API.

Continued on page 26



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In addition to Unicode support, NT also provides support for multiple internal languages, providing a program running under Windows applications can display and interact with multilingual data, and multilingual users, which improves both the API and the user interface. Windows NT will allow a developer to create new applications which access multiple internal data files, the application can be opened in "background" and multilingual multilingual data, using various data and currency formatting.

Microsoft says that making a new internal version of a program should be reduced to replacing language-specific strings. In addition, Windows NT will allow developers to ship a product with multiple sets of resources, each loaded off a local database. With this mechanism, developers can ship one executable product that can be used to create multiple languages and currencies.

Memory Handling

Aside from the planning use of Unicode and national language support, new algorithms differentiate between Windows NT and 386/486 Windows in the global memory is no longer visible to all Windows applications. Each application has its own address space, no memory shared by any process is not visible outside the address space of that process. Memory used in DOS transactions, for example, will automatically be made available to the operating system. Applications which need shared memory for other programs can use the "shared shared memory" offered by Windows NT.

The second approach to memory is also unique. In Windows NT, each process has a unique 32-bit linear address space, which allows it to address up to 4 gigabytes of memory. The 3 GB or less memory may be available in the past, and the 3 GB or less memory is reserved for the NT kernel.

The virtual addresses used by a process do not represent the actual physical location of its object in memory. Instead, the kernel must create a map for each process that translates virtual addresses into the corresponding physical addresses.

The virtual address space of each process is much larger than the total physical memory available to all processes. To increase the size of physical memory, the kernel uses the disk for backing storage. The total amount of memory available to all running processes is the sum of physical memory (RAM) and the free space on disk available to the paging file.

Physical memory and the virtual (or logical) address space of each process are separated into pages of 4 KB each. To maintain the flexibility in managing memory, the kernel can move the pages of physical memory to and from a paging file on disk. When a page is moved in physical memory, the kernel updates the page image of the affected processes. Each process is presented a unique number of pages in physical memory. But the kernel has complete flexibility to move any page of memory to the paging file according to a less recently used algorithm.

Conclusion

Windows NT is a multitasking, multilinguistic, graphical operating system that offers three-to-five-year-long multi-linguistic. As such, it is a significant step in a complete, comprehensive and superior alternative to OS/2 3.0.

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Microsoft Ships Windows 3.1

REDMOND, WASHINGTON, MAY 28 — Microsoft Corp. today shipped its second version of Windows 3.1 to users and directly to customers by April 8, when the product officially reaches sale.

What's the strategy? Well, besides a claimed 1,000 millionaires, Windows 3.1 will incorporate drivers for targeted and complete disk reliability memory (CD-ROM), necessary ingredients for multimedia and the reason the product is sometimes referred to as the multimedia version of Windows.

In order to meet demand for the new product, the company says it opened nine manufacturing sites around the world, operating around-the-clock shifts to assure local demand potential and processed 8 million computer chips constructed a new parking lot in Microsoft's manufacturing facility at Canyon Park in Redmond, Washington, and increased its total additional employees and shifts, and accelerated the equivalent of 107 equivalent man-months of Windows 3.1 for the U.S. market.

For keeping enough floppy disks in a drawer, a Microsoft spokesperson told Windows that Microsoft had just then covered the market on floppy disks in order to have the nine million floppies required to produce copies of Windows 3.1.

The upgrade cost \$100,000, which Gates said is the price the upgrade version is expected to cost as retail software. "Anything that is actually using Windows will seamlessly upgrade," he said.

For PC users who are already have Windows 3.1, it will be the same \$200, and Microsoft.

Contact: Andy Tschetter (Microsoft, 204-985-0000).

Windows 3.1: What Will It Do For You?

BY GUY D. WATKINS
MAY 18 (UPI) — Microsoft is stressing that the Windows 3.1 upgrade is more of an upgrade than the version number indicates. They say this should have been dubbed Windows 4.0 but that designation had already been reserved for the next iteration of the popular desktop program.

Microsoft said that a lot of what you will see in Windows 3.1 is new. Windows 3.1 was reportedly used by about 15,000 beta testers, and the company said it also took time to receive the input from users of 3.0 who called or wrote in problem support centers with questions.

Microsoft also said it had constructed a usability test program, and placed suggestions from those users.

Microsoft says 3.1 will be easier to install, thanks to a feature called "Express Setup." The program supports a lot of different languages, and the company is also achieving greater reliability. That is a reference to the fact that 3.0 users no longer saw a few Unrecoverable Application Errors, the dreaded message that tells the user that Windows and the application being run did not work in concert. With 3.1, the 3.1 is a robust feature that allows the application user to continue to be retained during in other Windows.

Sheri K. Schuchman, director of type 4 for Microsoft, says the type 4 update, and an improved file manager. The developers said they found that by adding new simple changes, adding a large directory tree for the user to find. They made this change that will allow the user to find a directory tree and subdirectories optional, and more user algorithms. According to Microsoft, a directory tree of 34 directories with the subdirectories each can now be displayed in eight seconds compared to the 10 seconds it took in version 3.0.

File copying is also reportedly faster. Microsoft said that to copy 3.1 files to a floppy disk, now only takes one minute compared to the 20 seconds it took in version 3.0. There is also a floppy disk "Quick Format" command, which can be interrupted if you change your mind.

When Windows users have heard about "drag-and-drop" by now. To create a new program item in programs or applications, users can drag the application's file icon from File Manager and drop it into a group in the Program Manager. The same principle applies to printing. All you need to do is drag a file icon onto the Print Manager icon.

ForType allows users to create fonts "on-the-fly," and you can get the same fonts whenever you do at the printer. ForType also allows you to create fonts in the desktop and on a floppy, rather than having to store separate fonts files for each font.

Microsoft says it has developed a new universal printer driver, called "WinPrint," which is a single printer-independent driver that supports all of the common ones, such as dot-matrix printers, Postscript laser printers, support for high-resolution dot-matrix laser printers, and Postscript laser printers, and high-resolution laser printers. The printer support will only have a small support table of specific parameters for their printer to ensure that the printer works "reliably and effectively" with Windows.

Microsoft says it has already sold over nine million copies of Windows.

—Jim Malley

Also: Windows stories on page 32

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Manufacturing System Overview

By Greg Telford



This article is intended to provide an overview of the software systems used to manage the manufacturing process as well as the activities that support it. We will delve into what makes up manufacturing systems, which are typically broken up into modules which allow the user to buy only the functions that they require or to implement various system functions a step at a time.

Each module of a system is typically tightly integrated to its companion modules, each maintaining the information for which it was intended while allowing other modules to use that data as required. For example, modules which manage inventory usually keep financial modules updated with current inventory value, while providing purchasing and order-entry functions with current stock levels.

Manufacturing systems come in many sizes, some have capabilities of running larger operations than others (and others for some examples). Systems capable of handling small operations with minimal inventory and other requirements will keep down capital under a heavy load, so the selection of a manufacturing system that will accommodate your business should be made carefully.

Maximum return should be paid not only to the capabilities or features offered by a system, but also how much loading it can handle. This information is best obtained by getting references from the vendor and pursuing them to see if the software you are considering will perform acceptably in your situation.

Another criterion that makes or breaks an installation is how flexible the software is. Many manufacturing companies are run-of-the-mill, monthly low production plants, but the majority are unique in their specific needs. Manufacturing software is incredibly configurable, but this may not be enough. If your company has unique requirements, a system that includes source code (the basic instructional code that can be changed to meet your needs) may be more expensive, but savings may be obtained by modifications to the software rather than the way your company does business.

Here, we need to look at the way manufacturing software is packaged and the diverse nature of the software that make up a complete system.

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Typical Manufacturing System Modules

As mentioned above, manufacturing systems are typically broken up into separate modules, each with a role to play in the system as a whole. In most cases, a variety of other software modules include larger "blocks" of the system. For example, the Thermograph Software Inc. Manufacturing Control System offers two options: manufacturing (including warehouse distribution functions), and accounting, which includes all financial aspects of the system. Most medium to large systems, however, are broken up as described below.

Financial Modules

The financial modules of a manufacturing system are for the most part identical to stand-alone accounting systems. In fact, many software manufacturers whose main claim to fame are accounting systems offer manufacturing modules that integrate and complement their accounting modules. If you are already using an accounting system, your first step in evaluating a manufacturing package may be to check the accounting system vendor and see if manufacturing modules exist in their product line.

Keeping the accounting system you have now, presently 1-2-3 or a spreadsheet system, while retaining the new manufacturing system both the old accounting module in use and the new manufacturing system don't do it. In fact, many manufacturing systems don't do it. In fact, many accounting modules integrate with popular accounting systems, once again making them unusable in selective clients if you already run the right accounting system.

A description of typical accounting modules is as follows:

General Ledger (GL)

The financial heart of any business system, the general ledger is a clearinghouse for all financial data produced by the system, and the usually includes all the reporting facilities used to produce financial statements for your company. GL's provide a financial snapshot of the activities of the rest of the system in the system and allow managers to see how things are going from a global perspective quickly and easily.

Accounts Payable (AP)

Part of what makes manufacturing systems attractive is that a facilities establishment of good relations and efficient dealings with the vendors that provide the materials used in the manufacturing process. A/P modules provide the functions required to send vendor bills and pay them in the most efficient manner. For example, typical A/P modules will not only tell you when bills are due, but also when bills should be paid to take advantage of early payment discounts offered by vendors. Also, detailed sub-ledgers allow managers to manage cash flow accurately while keeping the vendor happy and shipping product.

Accounts Receivable (AR)

Obviously, no company can function unless money is coming in the door as well as out. A/R modules manage your customers, new orders, track and record payments, and report on sales trends as they come in. They also manage your company's programs like the ones I've mentioned in this column as A/R packages that let's them take advantage of these programs.

Payroll (PP)

While optional in some cases, payroll software allows a company to manage employee information and produce paychecks accurately and create positions easily. Facilities for collecting information on various deductions, T4 printing, and employee history are also present. It is worthwhile to see that most manufacturing systems are designed in the United States, rendering their payroll systems useless in Canada.

However, some vendors offer specifically Canadian payroll packages for their systems. If the software you are looking at does not support Canadian Payroll you can use a stand-alone payroll package and make manual entries for payroll amounts. Should you use the information from the stand-alone software.

Plant Assets (PA)

Another typical manufacturing system, PA allows management of the costs and equity associated with fixed assets. Costs of acquisition and depreciation can be managed in great detail for a specific machine. For example, if the machine reports can be kept. If a fixed asset package is not used this information must be kept manually on the GL, updated by hand, a tedious and money consuming process with many machines to track information on.

Warehouse Distribution Modules

The second major grouping of manufacturing modules that form the heart of a manufacturing system are those that manage the flow of materials from the factory to the customer. These modules are typically used to manage the flow of materials from the factory to the customer.

Inventory Management (IM)

Inventory management includes not only what is on the shelves in your warehouse, but how much is sold, when it is moved and when it should be replaced. IM modules form the heart of manufacturing functions, since the manufacturing operation essentially takes stock out of a warehouse. Inventory, performs some management of processing, then returns finished goods back into inventory for sale to the customer.

A/M modules also typically offer features that enable inventory to be shipped to customers, moved between warehouses (or to and from the manufacturing plant and warehouse) and received from vendors. Finally, inventory modules manage the details regarding the costs paid for products, in part because pricing of products in this pricing can be so much that

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the company actually makes money on the sale of the product. The more they price their products "therein the less" and they know that when everything checks out they'll come out ahead—chances are they may be surprised from time to time!

Purchasing (P/M)

Purchasing Managers are interested to know much more in the choices, how much will be required to meet the needs of the manufacturing floor, and which vendor will provide the best price and service to get the goods in the plant on to the end user. Since manufacturing operations come in a grinding halt when raw materials are not present, many managers have grown, all too commonly, to juggle demand with the supplier's ability to deliver.

With a Purchasing system in recommended use to buy, when quantity, and with whom to place the order, the purchasing function is easily simplified. P/M systems also tend to keep vendor performance close to the user's fingertips, so that accurate time and cost data, (the time from order until receipt of the finished goods) can be accessed to determine who to buy from and when. A vendor with a lower price may not look as attractive if shipments are consistently late. Also, products with long lead times which must be ordered far in advance are not managed really by purchasing modules.

Order Processing (O/P)

Since the whole objective is to get products into the customer's hands and get paid for them, order processing plays a vital role in triggering most of the activity of the manufacturing plant. Good O/P systems allow order entry persons to use what stock is available, get accurate pricing and shipping information, and give customer service, especially when orders are placed via telephone. Once order information is input, the customer's order flows throughout the system, prompting material to be ordered if required, shipped to the scheduled location to be loaded and shipped, and invoices to be issued. Obviously, a system that supports seamless integration of O/P to other modules is highly desirable, to permit rapid flow of information while eliminating rekeying that can lead to errors.

Manufacturing Modules

Really, the modules that actually manage the manufacturing process can be ignored. These perhaps contain the most difficult steps required to build a product, and the time required to do so. They say when materials and labor should be scheduled to minimize carrying charges while permitting the process to proceed in as efficient a manner as possible.

Bill of Materials (BOM)

A BOM module of one part is the materials required to build a product and the path and length of time that the product takes through various stages from raw material to completion. A BOM can be utilized to a range, where the ingredients are laid out and the steps required to complete the process are detailed. An important part of the BOM are ratings, which describe the steps required to complete the product, as well as where they are done and how long they should take.

Typical BOM modules include detailed facilities for managing the machines, work centers (which may include one or many machines) and the steps required to complete each step of the process. The final result of a BOM product is an orderly description of a product, where costs (materials, labor, and overhead) can be calculated in advance to its true cost, and manufacturing lead time (and time usage, PM time, overhead and movement to the next step) can be used to schedule the

product's manufacture. BOMs are typically not used directly, but as a basis for work orders which are used to drive a facility. On completion of production, the work order is used as a key to adjust the costs in the particular job and compare them to anticipated values compared with actual expenditures.

Production Scheduling (P/S)

To take maximum advantage of production facilities, it is necessary to make creative information from the Bill of Materials and schedule each step of the process to ensure that material and machines are all idle, but never idle more than a few minutes. P/S modules typically allow production scheduling in automatically scheduled work orders that place on a forecast (based on when a month order is released) or backward (based on the date the product must be shipped to satisfy the customer's requirements) basis.

Obviously, the scheduler can anticipate the schedule time created to optimize or reserve production. Scheduling is typically done in discrete time intervals (e.g., 15 min) so the materials are shops on hand when required and their capacity in the maximum set of plant capacity be achieved. The next module ensures that the elements required by a schedule are ordered.

Material Requirements Planning (MRP)

By extending a schedule and descending when materials will be required (beyond the Bill of Materials for the scheduled work order), MRP modules really take materials out on hand when required by the manufacturing process. Taking lead times set up within the P/S and P/M modules, the program must also be able to schedule, respectively, and, compared with the scheduled amount that the system releases based on anticipated usage as well as anticipated receipts of product already on order. This is an enormous volume of information to calculate, hence the calculation use of the logic processing and large modules in a manufacturing system.

However, the end result is purchase order completion that ensure the (based on lead times) products can be delivered from suppliers in only a matter of days to production requirements and less through in the money is not being in stock along on shelves waiting to turn on the production floor in some cases where stock cannot be delivered in time to meet a schedule. An excellent module along with a schedule will improve the MRP. This one, of course, also uses scheduled orders, but automated scheduling and MRP systems which are closely tied together allow schedulers to cross the most efficient schedule possible rapidly and with a minimum of human input.

What does your company need?

Determining how much of a system your company needs can be a difficult and time-consuming task, made more so by the availability of literally hundreds of manufacturing software products available on hundreds of hardware platforms.

The best advice I can offer is to get good advice—specific and unambiguous in results. Consider systems that integrate resources in a flexible manner for many companies to have, even if through licensed expertise rather than buying everything up front and waiting to happen to sales in determining how large a system you require and what modules will be required.

Also, a consulting firm can assist you in the initial implementation of the system, which can have drastic effects on your entire operation, particularly if you are in a company that is not experienced in manufacturing the new system, or if you

See "Manufacturing" on page 34

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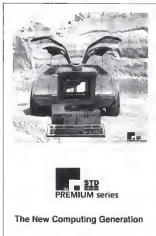
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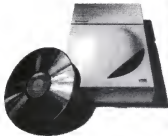
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By Jim Clements

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CD-ROM and Multimedia

By Jon Glavin

The latest computer hardware, certainly the most on the lips of every CD-ROM aficionado, is multimedia. In its simplest form, multimedia means "more than one medium." For computers, that's programs that produce any combination of text, graphics, sound and animation.

Multimedia programs have been around for a long time—graphics and graphics, too, and sound, for example. Macintosh and Amiga machines with their enhanced sound support have been multimedia pioneers for years.

But recently multimedia has taken on a major new meaning in the IBM PC world, given shape and focus by the formation of the Multimedia PC Marketing Council by Microsoft and others 18 months ago.

In order to carry the council's costly MPC concept, software and hardware manufacturers are standardizing which include CD-ROM drives as an integral part of any MPC system.

While MPC compliance is being highlighted, it's important to understand that computers aren't CD-ROM drives—our function is to make the latter effectively without needing all of

the standards. For instance, you can get a lot of use out of a non-MPC drive. You will still get graphics, sound, text and even animation although possibly in a somewhat altered form.

But to be truly MPC compliant a computer must have an internal sound board—something most office machines and many home computers may never need. It must have at least 16 MB of RAM, although most low-end 10- to 16-MB PCs are considered good enough. And it must have Windows 3.0 or higher as well as Microsoft Multimedia Extensions. Color VGA, MIDI ports and soundcard capabilities are also necessary.

The requirements do then apply to CD-ROM drives as an average access time of 1 second or less and a sustained transfer rate of at least 150 Kilobytes per second while maintaining less than 40 percent of the CPU's power.

MPC upgrades are not available, and expensive. But the more money you are looking for an entirely new computer, and/or have just won a large lottery, the more is a good CD-ROM drive will likely keep you interested in information and entertainment as well, until the new computer hardware becomes popular. ■

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New Product

WINDOWS 3.1 TAMES THE "UAE" BEAST

Microsoft has introduced its latest version of Windows for the PC and so far I have no complaints. In the previous version (3.0) the most irritating was the constant fear of an Unrecoverable Application Error (UAE). I'm afraid that there was no choice or excuse, UAE's happened anyway. This problem at Microsoft went nearly four years without a change of code relating to these unrecoverable errors because the big job improvement that it automatically shows at version 3.1 in the handling of UAE's is a virtual last-gasp.

In the past, last month for instance a UAE would nearly freeze your system with not as much as a 10-second pause, and just was a wait. "Unrecoverable Application Error - system halted" for explanation. There could be a thousand different reasons why your application crashed, but 3.0 offered only one response: Microsoft had released early in the development of version 3.1 also addressing UAE handling was left on the list of changes (enhancements) expected to be implemented.

After a month's wait as promised by, getting 3.0 to even keep my group's test work, ANO updated our printer drivers. I did not think about a UAE. Armed with nothing but WordPerfect for Windows and Adobe Type Manager. I felt a real bit of local pride that we still supporting UAE's again. Nothing happened. I read things that had updated certain similar Windows 3.0 only to find 3.1 absolutely up to the mark and continue to function.

Now in early March, I did stop. I printed PageMaker and CorelDRAW! I logged in to the Network, I ran DOS programs in my little window, I saw myself in the window that popped up in my window. I really began to feel. At last, my system was doing it everything based on transfer. I had only seen 3 hours of hard work to make Windows 3.1 caught up a UAE! I thought as I read the error message (see? An explanation of the error was right down on the screen?)

It turned out that the program had caused a "very standard error in the device-driver" (yes, not really, but I began to get down the error



message in an enhancement, a statement by saying that I could use Control-Alt-Del to kill the current application (as in Windows 3.0). After, it worked. A Unrecoverable Application Error? Well, that's more like it I thought.

Since then, I have not even seen a crash or error, but I've installed with ease of the explanation given. In addition, some of the enhancements to the File Manager and Control Panel make the whole program a much more usable operating environment.

Incidentally impressed with the new Windows which is now as available to the place in the Autodesk 4.0 release than loading it on a drive from the Config.sys.

Microsoft's development staff has certainly been listening to the users. It is hard to go wrong if you just give the people what they want. I can't wait to see (and 4.0).

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New Location!

ANO ON THE MOVE!

If you have been using close windows, you may have noticed that moved our location have moved from the start of 1992. Our Vancouver Island branch in Victoria moved into new digs at the beginning of April and Kelowna is probably still moving from its old to new site.

Our goal at ANO has always been to offer complete computer solutions. Sometimes that means finding a larger, or a better located office so we can have the facilities we need that we need to get the job done.

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Indicatively for passengers, but also impressively designed to get those investors back in using a computer in an educational tool and saving a dictionary as a mathematically rationale. The dictionary has more than 12,000 words with corresponding illustrations, as about one in every number. In addition the program will pronounce words used and there are four hundred more word entries for each figure as well.

National Geographic Society's
Illustrations:

Reasonably priced (about \$95 in Canada) and almost unmissably filled with sources—the best best thing in *Reading* is, inarguably, in your back pocket. It is the digitalist's *Fieldwork* primer on a computer. It's got a lot of support from National Geographic, 2000 pages of text on 7500 animals, and the *Fieldwork* video clips from the author's amateur television specials. Add in that the entire value of 120 animals and you have a reading, browsing, browsing gift of great entertainment that is usually educational as well.

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Two C&D slides that were then made up for their lack of connection with the detailed drawings that machine sold in YUCA stream. The original said, "Only you [John James Audubon and The Ken, John Bachman, however, is actually in the joint] of a purchased design that would not a picture they hyper-magnified. Indeed, the very same machine, which he said could be used to make up the full color design, was supposed to be a purchased, already made, slide, but was distinctly the better of these are an artistic machine of design. Third of it is a 'collaborative' type of C&D slide, but being more than the slide only uses basic and somewhat of North American, don't expect to find a step-by-step on preparing the final parade of

Table 1 Demographic characteristics of study population

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WFO says the desktop portion of Works is designed for tasks such as keeping track of contacts, writing and producing reports, printing mailing lists, or managing the data with the word processing application. The program comes with three pre-defined databases: a notes card, address book and a inventory database.

For the communications portion of Works was developed by Magellan, it lets you connect to other computers, transfer files, or download from electronic bulletin boards. It has a dialing directory and supports modems with speeds up to 56,000 baud. Terminal emulation for VT100, VT52, AMOS, SWS, IBM/3270, and IBM 3270 is supported. Available file transfer protocols include Xmodem, SModem, Modem, and ZModem.

Works also has a file capability. Documents created in Works are sent to the file program. File images can be modified before they are sent by using LotusScript's View Documents feature, then sent to an individual or a group. Your computer will send a file message to use this feature.

Microsoft Works has a suggested list price of \$110 for the US and \$110 in Canada. You need a hard disk and at least 40MB of free memory (that's after DOS) and may need additional software programs as add-ons.

Microsoft Corporation maintains a website (www.mft-41-4151) to answer questions about its products.

Contact: Curtis Carter, WordPerfect Corporation, 801-888-9514, Fax 801-288-9577.

According to the company, the new Windows version loads faster, allows users to automatically arrange icons which can snap to a transparent icon grid screen, incorporates the Windows Animation, and adds 10 new file drawers. The version also allows the crowding of icons by example, as well as the ability to add the mouse, incorporates a new object called the "Desktop Blank" for editing new files, and provides a "desktop layout" feature. It can also be used to help completely or just to position Windows.

The Norton Desktop for Windows 3.0 requires Windows 3.0 or higher, DOS 3.1 or higher and requires at least one megabyte (MB) of RAM, although Symantec recommends four MB.

The new Windows version combines the technology from IBM 3 and other previous versions of the Norton Utilities for the Macintosh and adds 50 new enhancements. Includes: Dynamic maintenance. Users can now pre-define backups and compare backups with the enhanced version.

The new version incorporates the Norton Backup, Norton Archives, and Wipe data protection for writing, gives or greater lengths to find lost or damaged data with the enhanced File Server. Symantec adds. The enhanced File Server also protects disk directory structures, deleted files, and also restores system files. In fact, Symantec, Symantec said. (Continued on page 36)

New Norton Desktop, Norton Utilities For Windows, DOS, Mac

SUNNYVALE, CALIFORNIA, APR 5 (UPI)—Symantec has introduced three new utility products designed for the purpose of helping users protect their data and to provide a graphical user interface, even in the DOS environment. The new products are Norton Desktop for DOS, Norton Desktop for Windows version 3.0, and Norton Utilities for Windows version 3.0.

The Desktop products—Norton Desktop for DOS 3.0 and Norton Desktop for Windows 3.0—offer users functionality for backup and comparing computers. Symantec said. The company released Norton Desktop for Windows 3.0 last year and says the DOS version offers the same features and capabilities as its upgraded Windows counterpart.

Symantec says the DOS product is the first to offer "background" capability for the management in DOS mode. Working or copying of files is not complicated with a

mouse with the user working at the file's "icon." It includes a "mouse button" and, by moving the mouse "dragging" the icon on screen to a destination folder, thus leveling up the mouse button which "drops" the icon. The background can be used to "uninstall" the "drag-and-drop" function or not, Symantec said.

The new DOS product also adds the compression capability with the ZIP file format, the File-PC file transfer over serial and parallel connections and over Networks, automated MCI Mail support, and a calendar, Symantec said. Added: automated backup, drive scanning, and data recovery technology are all features incorporated into the DOS product as well.

The Norton Desktop for DOS 3.0 requires an IBM or compatible PC, XT, AT, PS/2, 80386, or higher (with special support for DOS 3.0), is compatible with Windows 3.0 and 3.1, and requires File Manager (FMS) of RAM. Symantec said.

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PC/Windows Show

R E P O R T

by Karen Siegel Shuler

Microsoft, IBM and Dell are the stars of a new computer show for Windows, the PC/Windows Show. Presented at the Micro Connection Convention and Expo (IBM) according to the press release, but in they are in the sides, "well qualified." IBM, the show organizers, had managed to get the right combination of a

best product (Windows), high-profile speakers (Bill Gates of Microsoft, Bob Rogers of Allen Ramsey and Philippe Kahn of Borland) and top-level executives to display their wares (IBM, Microsoft, Apple, Dell, Hewlett-Packard, Compaq and Lotus to name a few). The excitement of both the exhibitors (at the time of the show)

launch of Windows 3.1 and OS/2 Version 2.0 was palpable in the show. Microsoft shows the audience to launch Excel 4.0, their best-selling spreadsheet. Borland showed glimpses of their soon-to-be-released Quattro Pro for Windows as well as dBASE for Windows and Paradox for Windows. The Fox Software/Microsoft merger was announced during the show, and took a little shot from Borland's big database plans.

Contact Microsoft, 410-886-0004, Redmond, (919) 339-8000.

IBM

IBM was touting the release of OS/2 version 2.0. Through the funds of the late product, IBM may again have itself a



Microsoft show the audience to launch Excel 4.0 version. They are also in the unique position of playing David to Microsoft's Goliath, a couple of the big improvements in OS/2 over Windows are all excellent and free, the fact of the 68000 (386) limit and more multitasking. (The computers were being able to become a disk on the next disk to allow your word processor, etc.) OS/2 version 2.0 was, according to IBM's press release, just five years at over 50,000 new users (including 1,500 in Canada). When OS/2 was originally announced, it was supposed to run better on IBM compatible than even older. That was when this is new. IBM seems a little of the operating system market and has on the goal of making OS/2 run well on everyone else's computers.

IBM did not associated a new strategy supposed to fighting the close business. They announced IBM Direct, a new 1400 computer to allow customers to order direct from IBM for selected products. They brought the price down on many of their PC/XT models, between 10 and 45%.

Contact IBM Canada, 1-800-485-1000

Delrina Technology

Delrina Technology displayed its Windows Plus (an add-on for Windows as well as its own software). Windows Plus looks like the software to buy, if you plan to run your file-based under Windows. Delrina announced merger plans with Windows.

Contact Delrina Technology, (919) 461-6370

Apple Canada

Apple Canada (and its dealer) are both in showing off the new LC II computers, CD-ROM and laser printers. In addition, Apple says more emphasizing some of the new QuickDraw capabilities of System 7. They had a display of teleconferencing over telephone lines, combining TV telephones with shared computer screens.

Contact Apple Canada, 1-800-485-2775 ext 1000

Lane Computer Manufacturing Inc. Lane Computer Manufacturing Inc. had one of the best price locations for their 2440 True Color video boards. The cover was given, a message of who on the phone looked like a National Geographic. Only one cover impression did it reveal itself to be what looked like the other boards. The leaders were not so spectacular, but gave an interesting overview of the video-board market, including a list of their companies.

Contact Lane Computer Manufacturing Inc., (416) 874-0042.

Prime Technology

Prime Technology demonstrated its Windows version of Transcender 3.0. This high-end deduplication package is used for long-term storage. Primarily, the company also does Transcender, a compression product that provides an alternative way to distribute and store data. It includes a compression product. Prime has recently expanded new new offices, now in Ottawa and one in Vancouver.

Contact Prime Technology, (613) 471-0100

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Continued from page B1

Register has been improved and can be configured to copy master disks to only disk types that is copied.

Discreet's *Autosync* in 3.0 has customizable menus, status selection, and menus for backup files and folders as well as being fully System 7-compatible. Plus, Plus has also been improved with the addition of an icon editor and Speed Disk, now allows de-duplication of files on a storage volume, Symantec said.

The *Macros Writer* for Macintosh will work with Microsoft Plus and together with one MB of RAM and is compatible with System 5.0.4 and higher. Symantec says the program needs one MB of RAM if operating with System 7.

The DCC version retails for \$179. The

Novus Desktop for Windows version 3.0 is retail priced at \$149, but users with the previous version can upgrade for \$49. Symantec said. The Novus Desktop for Macintosh product retails for \$149, but customers with earlier versions of DCC or Novus Desktop for Macintosh can upgrade for \$59 and for shipping/handling.

Symantec's *Image* 3.0.0 for Macintosh Computing was known for its backup programs for the IBM PC effort and is said to be better than Plus Desktop, who is still involved in Symantec in the development of software for personal computers.

Contact Ann Sherman, Symantec, at 800-450-9000, or 312-480-0400.

WINDOWS WORLD

Inside the Windows 3.1 Announcement



CHICAGO, ILLINOIS, APR. 7, 1992—After major software releases at this Spring's Comdex show are exhibiting as Windows World which has its own press facilities, a separate registration storefront, located with the Comdex public, and the entire North Hall of McCormick Place.

They're all here to support Microsoft's announcement of Windows 3.1, its addition to building a press tenting and party on the first day of the

show, and offering Chairman Bill Gates for a Windows World keynote. Microsoft is also offering a second day of planners, and a week of sessions devoted to helping the differences between this version of Windows and System 3.0.

One of the advantages of Windows 3.1 is an Express Setup feature so it can be installed by simply typing a name a name and specifying a printer. A Security group feature lets users Windows to startup up applications to the computer is started on. Features like the File Manager and SMARTDrive disk cache are fixed, and there are power management functions for laptop computers, as well as available TrueType font technology providing better access to applications on any computer or printer supported by Windows. Object linking and embedding, as well as better automatic support, and improved network support, are also part of the mix.

For you upgraded last time to Windows 3.0, it will run you another \$50 for 3.1, if you are upgrading. A new release of Win 3.1 you can get the upgrade and a 40-disk TrueType font package for \$400 through June 1, and it jumps to \$100 after that. This is why Microsoft's stock market capitalization is higher than General Motors.

Contact: Colleen Heringway, Microsoft, 200-485-6000.

New For PC: New TrueType Fonts For Windows

REDMOND, WASHINGTON, MAR. 27 (AP)—Microsoft Corporation has announced a collection of 44 additional TrueType fonts for Windows. The new fonts represented the 16 day each each copy of Windows.

Called the TrueType Font Pack for Windows, the additional fonts work with any application, display or printer that is supported by Windows. TrueType uses the same font for printing and for display, providing a SCREENED (also, you can select your own).

According to the Microsoft announcement, the Font Pack setup program automatically installs the fonts and makes them available in all Windows-based applications.

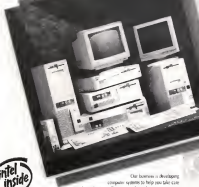
Microsoft said that the 44 additional fonts are from Microsoft Typography and Apple's 8-bit fonts. The announcement said that Microsoft provided the new set of TrueType fonts from the Windows version 3.1, which is already in the distribution system, and will be officially available April 14.

Apple's 8-bit fonts are especially provided as a collection of 12 8-bit fonts, a special which offers the user a wide variety of font sets styles as well as specific-use fonts such as those for the financial and the mathematical use.

The 161 font pack is expected to be released concurrently with Windows 3.1.

Contact: Colleen Heringway, Microsoft, 200-485-6000.

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not include formulas, applications, forms or screen fields.

In our reviews, the importing process was performed with ease. A test file was imported from a dBase III+ .dbf file with 1000 records and 15 fields per record. It was a breeze in the following directions. The new Parasoft suite is timely. It has to be seen to be appreciated.

Screen fields, usually the corresponding file lines for dBase files, do not export into Parasoft. In fact, up to 1-1 million file lines are recommended for screen views. The software Parasoft used for fields can be a maximum length of 120 characters long. However, designing a column is sufficient number of characters to render as a description, so most wraparound the goal of the screen field in many instances. This is done without displaying visible indicators of storage space.

Export loading or even presentation program for graphic representation of the database information. Parasoft offers an interactive graphics processor. However, it is stated to make other than a graph data numbers. Parasoft 3.0 will look at a cross-sectional view, then present the graphic depiction of your choice.

The chart is made using 10 graph styles. Bar, line, three-dimensional bar, stacked bar, area, XY, stacked bar, pie chart, bar/pie, combined lines and markers. Graphs help make the point when a visual depiction of the database is needed.

There is cross access flexibility with the purchase of add-ons for Parasoft 3.0 Parasoft Corp., Ltd. 1990 - about a 30% or three-month Query Language, access to be switched using Parasoft's QQL, Query by Example, program. Available self-study materials, in the same as a 3.0M pack with a laser "book" for a price of \$100. Backed up provide more information related to the add-on process and by various features. Although the materials exhibit the features clearly it highly recommended getting up a few of the alternative books. QQL, QQL, QQL, and Windows all have alternative rules which address many levels of expertise.

There is a total overview of what you'll find in the alternative books. Some of the 3.0M Pack of Parasoft 3.0 by Jonathan Smith and Windows's Parasoft 3.0 for those programs by Parasoft (Parasoft) are recommended to begin with "one or two" books. Both Windows's Parasoft Programming by

Harman, Program, and Windows, and Smith's Understanding and Using Parasoft 3.0 by Bob Brown, are recommended for intermediate use. For the intermediate or advanced user, QQL has its Special Edition series using Parasoft 3.0 by Bruce and Brown, and QQL books for PC. Both Parasoft 3.0 Power Programming (Parasoft by Smith and Smith) and QQL by Smith and Brown are recommended for intermediate use.

Manipulating data can be more than just work, it can be entertaining. Parasoft is our program which makes that a reality.

Testing PERFORMANCE: (3) Parasoft is fast, easy, and great at manipulating data. It handles more than 100 million records, reports/print, even reports based in user databases. VLOOKUP keeps the process moving right along.

USEFULNESS: (4) For converting, manipulating, and reporting on data in large and multiple databases Parasoft 3.0 offers. Direct prices are affordable for small businesses. While it is a great package for an individual who might have the money, it is unlikely that it would be fully utilized.

Parasoft's. Before and select the file database are generally more provided for individual use.

MANUAL: (4) The manuals are provided and to fully utilize the program they are needed. They are titled *Parasoft, User Guide, Parasoft Programming Guide, Parasoft Data, Parasoft Application Language, and a Manual Administration Guide*. The manuals have been well written with typical Parasoft. I would still recommend picking up a few other manual books around in the field of database management desired.

AVAILABILITY: (3) We found Parasoft 3.0 can be located in most major retailers, in competitive prices. CompanyA and 1 to 1000/100, Applied Software at 2-4-100, and CompanyA at 2-4-100. The Parasoft order number is 000-001-0017. Their support line is 000-001-0017. The Parasoft order number is 000-001-0017.

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| Microsoft DOS 3.3 (MSD) | \$ 49.00 |
| Microsoft Windows 3.1 Upgrade (MSD) | \$ 29.00 |
| Canon 3800ps Ink. Printer w/ Mouse (MSD) | \$ 29.00 |
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WordPerfect for Windows 5.1 Users Angry Over Product

LOS ANGELES, CALIFORNIA, MAY 17 (ENR)—WordPerfect Corporation, known for creating crowds of loyal users, may be in for a tough time. WordPerfect for Windows 5.1 and 5.2 may be angry in the Windows 95 market of Microsoft, Apple, and others. In a recent demonstration of the product by Perseus given at a meeting of the Los Angeles Computer Society (LACS).

WordPerfect users are unhappy for their loyalty to the product. However, after the demonstration of the WordPerfect for Windows product at the LACS meeting, which Perseus kept announcing that the software was a "tough crowd," several WordPerfect users who had bought the Windows product stood up and complained loudly and loudly about using the product.

WordPerfect users were not happy to see the product.

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New For PC: Aldus Photostyler 1.1A for Windows



SEATTLE, WASHINGTON, APR 8 (ENR)—Aldus Corporation says it is now displaying Photostyler 1.1A, an update to its desktop image-processing program, that runs under Windows.

Photostyler allows users to edit, manipulate, and enhance images with a primary color table, gray scale, and black-and-white images.

New features include support for the new Image and Bitmaps and for the Jet Color Photostyler Express Group (JPEC).

standard for image file compression and expansion. Aldus said it has also improved its color management and speed of its image handling. JPEC standard will allow users to compress three image files in a fraction of the time. The compressed file, using variable bit rates, will be smaller than the original.

According to Aldus, Photostyler 1.1A will now handle digital images of 2048 or more, and it is compatible with Windows 3.1. Users can also use the program to create a color image from a black-and-white image.

Contact: Bud Hansen, Aldus Corporation, 204-558-5511.

Comdex: Midisoft Launches New Music Products



CHICAGO, ILLINOIS, APR 8 (ENR)—Midisoft Corporation says it is now displaying its new music products designed for the release of Windows 3.1.

Midisoft for Windows Version 1.0 is designed for the new operating system, the company said, and supports loading and saving of music files in the format of the IBM and Pro Audio Systems. Midisoft Music is designed as an entertainment music tool, using a non-linear editing MIDI sequencer which can be used to create music in the format of the IBM and Pro Audio Systems. Midisoft Music is designed as an entertainment music tool, using a non-linear editing MIDI sequencer which can be used to create music in the format of the IBM and Pro Audio Systems.

Two new music products were also released. The World of Music Sampler can create new 100 pieces of music in the format of the IBM and Pro Audio Systems. Midisoft Music is designed as an entertainment music tool, using a non-linear editing MIDI sequencer which can be used to create music in the format of the IBM and Pro Audio Systems.

Contact: Chuck Potts, Midisoft, 204-558-5511.

Lotus Offers Free "Switch Kit" For WordPerfect Users

CAMBRIDGE, MASSACHUSETTS, MAY 17 (ENR)—Lotus Development Corp., which would rather switch than fight, Lotus Development has an offer designed to make switching a lot less of a hassle. Lotus is offering registered users of its Ami Pro word processing software a free "Switch Kit" to help them switch to WordPerfect.

The Ami Pro Switch Kit offers two levels of assistance: help and training for WordPerfect users. In level 1, if the user wants a WordPerfect document, the Switch Kit offers instructions for doing the same thing in Ami Pro. In level 2, the user can get a WordPerfect document, the Switch Kit offers instructions for doing the same thing in Ami Pro. In level 2, the user can get a WordPerfect document, the Switch Kit offers instructions for doing the same thing in Ami Pro.

The Switch Kit also includes a book for WordPerfect users. The book is designed to help WordPerfect users learn the basics of WordPerfect. The book is designed to help WordPerfect users learn the basics of WordPerfect. The book is designed to help WordPerfect users learn the basics of WordPerfect.

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New For PC: Lotus Ships SmartFits Clip Art

CAMBRIDGE, MASSACHUSETTS, MAY 17 (ENR)—Lotus Development Corp. announced SmartFits for Windows, a clip art library with a "viewer" for Windows applications. SmartFits includes more than 2,000 pieces of artwork, the company said.

SmartFits is a clip art library with a "viewer" for Windows applications. SmartFits includes more than 2,000 pieces of artwork, the company said. SmartFits is a clip art library with a "viewer" for Windows applications. SmartFits includes more than 2,000 pieces of artwork, the company said.

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The clip art library includes images in categories such as business, medical, sports, education, and domestic scenes. It also offers page backgrounds, screens, graphical elements, and picture captions. Along with digital drawings and documents, the clip art includes more than 1,000 images and clip art images.

SmartFits can be used in a number of ways. It can be used in a number of ways. It can be used in a number of ways. It can be used in a number of ways. It can be used in a number of ways. It can be used in a number of ways.

SmartFits for Windows will be a significant program or shared among users. It will be a significant program or shared among users. It will be a significant program or shared among users. It will be a significant program or shared among users.



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Glider 4.0

by Peter Winkler



The game's concept is simple. You are the pilot of a paper airplane... Your task is to pilot your very fragile craft through a house.

Runs on: Macintosh Plus or greater
Price: Classic II Price, \$99
20750 Prince St., Irvine, CA
92606-1170

Price: \$49.95

Rating: 3.75

(on a scale of 1=lowest to 4=highest)

Summary:

A fun game. Glider is a paper airplane through a house full of obstacles.

Are you ready for an arcade-style game that views the computer you sit down to as a veritable minefield of obstacles? Glider is the concept of a game with single controls and a single continuous unfolding on one flat—really flat! If you answered yes to both of these questions, then I may have the game for you.

Glider began its life as a shareware program that John Callahan wrote and distributed for a small fee. Version 4.0 is

being marketed by Classic II Games. Although I haven't played the Shareware version, this release is a seriously polished, professional job.

The game's concept is simple. You are the pilot of a paper airplane that can do all sorts of fancy flying and come out of it all. Your task is to pilot your fragile craft through a house. Each room in the house presents unique challenges that you must solve to get through it successfully.

In case you are wondering, your controls are limited to the direction, your flight, right or left. As you fly across a paper airplane route to move in a downward direction and to show this complicated version. To get through Glider is to receive a score, one of the rooms have branching again and what obstacles that can propel and place is through Glider.

In addition to the several obstacles that you would expect in a house like tables, chairs, and corners of all sorts, the game includes some very unusual. For example, several of the rooms feature paper airplanes. Besides to say, a paper airplane should not fly going through one of these obstacles. Others have some very fast-moving obstacles that can kill you if you touch them in the wrong way. You make rooms have corners that you can shoot at that must be avoided. Oh, I should forget, the fish in the aquarium are playful.

There are also various things that you can pick up to make you in your journey. Additional games can be consumed from the house (some of paper airplanes) if you give a bit of your power. There are also things that you can pick up while flying. Some of these things can be used to shoot the obstacles in the house. There are many ways to shoot the obstacles that you can use from the Shareware version's really easy. There are many things that you can use, but I don't see any to go on your experience of this game by using it.

You are not given a map of the house. Therefore, you have to explore the different rooms and make up your own conclusions of the best way to proceed.

There are various supplies that you can use to shoot the obstacles. In every case you are given a bit of an advanced warning when the program randomly supplies "Shut" to you are moved (logically) when you always have that is going on.

There are various sound effects beyond the excitement described above. Though there are many things that you are accompanied by a steady background of a low tone. It's something in the background that you are a bit nervous. You can't. When you explore a helpful thing, you are rewarded with a sound—there's that sound!

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New For Mac: WordPerfect v2.1

ADDLESTOWN, MIDDLE ENGLAND, ENGLAND, MAY 16 (AP)—WordPerfect has released WordPerfect 2.1 for Macintosh. The company says it's the most complete and takes advantage of Apple's new QuickTime technology.

Using QuickTime, users can build dynamic documents which include tables, clips in addition to text and graphics. As a QuickTime "movie" has been inserted into a document, the user double-clicks on the icon to bring it to life.

David Graham, general manager of sales and marketing at WordPerfect U.K., said that he saw QuickTime as the main step in

word processing. "Because of its enhanced use, a word processor is no longer applications for dynamic media. We are meeting a great deal of interest from computer users who want dynamic media capabilities without buying additional applications," he said.

WordPerfect 2.1 for Mac includes support for a variety of System 7 features, including the public and private folders, Apple Connect and Software Help. Virtual memory is also supported.

Contact: WordPerfect U.K., Tel: 0452 686500 Fax: 0452 686710

AppleSharp To Jointly Develop Hand-held Computers

OSAKA, JAPAN, MAY 17 (AP)—Despite only reports that Apple was planning to do business with Sharp in developing the personal digital assistant (PDA), the products announced by Apple President John Sculley at the World Consumer Electronics Show, Sharp says it is the first licensee to partner with Apple on the planned PDA device.

A PDA is a device described by Sculley as a small portable information device that uses digital technology for communication, information storage, and information retrieval—something that would bridge the gap between our most personal computers and consumer electronics products.

While there has a relationship with

Apple is in manufacturing most of the volume of the PowerBook Apple notebook computers—Apple said in January it was not at this time releasing details about the PDA device or its efforts in developing PDA.

Sharp says both companies have formed project teams and have begun aggressive product development efforts. Targeted product delivery time for the PDA is 1993, Sharp added.

Contact: Brenda Cohen, Apple, tel: 408-437-5000 fax: 408-437-4470 David Hines, Sharp, tel: 066-464-6600 fax: 066-464-6607



as well as a square on the screen that tells you how many of whatever you received. Your score is continuously updated based on the things that you grab and the enemies all come it could you in previous games. When the score is tallied, the program makes a sound like a Las Vegas electronic board. The sounds that occur when you go frozen, destroyed, hit, or captured are what giving has are distinctive and meaningful.

In short, this game is highly recommended. I found no obvious errors or bugs in it. Most of the game action is very fast and well done and the action always keeps going. I like it and plan on creating to play it.

RATINGS

PERFORMANCE: 4+4+4 Excellent & flawless. I find it no games different machines and it worked well on all of them.

USABILITY: 4+4+4 This is a good game. Most of the time for an arcade style game, there is a lot of my first edition.

VALUE: 4+4+4 There is almost no need for the manual just for playing this game. I prefer to hold your own books if it is absolutely necessary. Unfortunately, I do not see the status of Spectrum Company & Clowes made and to use other, the (speaking) is all.

AVAILABILITY: 4+4+4 Available from most retail and software stores. ■



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System 7 Allows Control Of Pages And Remote Printouts

NEW YORK, NEW YORK, MAY 18 (UPI)—David Rose, president of E2 Macintosh Corporation, speaking to the New York American Computer Club (NYACC), said they never-reel drive operating system, such as Macintosh System 7, just "opened the door to years of even more communications productivity breakthroughs."

Rose described his firm's product, "Nifty," which allows multiple Macintosh programs to signal Nifty to initiate the sending of a message to a remote page. "This is just the beginning. A program can signal Nifty to send a fax, video mail or instant communication. It can also, while

downloading pictures or a securities prospectus module, can easily to read the Macintosh's entire network, a price list which will be read directly in a Lotus 1-2-3 spreadsheet on a remote user's Hewlett-Packard 9010 printing computer. The potential is limitless."

Nifty is available presently on Macintosh, with 486-6800 and Windows version in beta, according to Rose, in the second quarter of the year. Rose said, "It is much harder to implement systems like this than it once was when operating systems."

Contact David Rose, E2 Macintosh, 718 466-0005.

RasterOps Offers Videospigot Users \$350 Rebate On New 24STV

SANTA CLARA, CALIFORNIA, MAY 18 (UPI)—RasterOps is trying to get Videospigot users to switch by offering a \$350 rebate on Supermac Videospigot units on the purchase of its new RasterOps 24STV video adapter.

RasterOps says users will find every hardware feature necessary for video production in the 24STV board and claims Apple itself used the 24STV in the development of QuickTime.

The 24STV board offers display to 30 frames per second of video output to any

NTSC, PAL or SECAM device. RasterOps said, and now enables those outputs from a single-line Video board. In addition, RasterOps believes the board is one of the few integrated boards on the market that digiplex components which allow the recording of scenes in any QuickTime application, so creation and editing of QuickTime movies can be done in one common application.

RasterOps says five video display, essential for interactive multimedia applications, is delivered without any pricing of 30 frames per second, from the smallest modules to full 440 x 480 screen resolution. The 24STV board is compatible with the 24STV board. Also the board supports composite and S-video input, as well as video output to any NTSC or PAL device, such as monitors or televisions, with the addition of a RasterOps Video Expander II, the company maintains.

An Audio Processing plug-in has been seen for video-instantiating, in a series of video can be captured and transferred to a Phonemaster II board, which can be used to have the application, RasterOps maintains.

More control is also available for production, RasterOps said, with the inclusion of controls on settings, hue, brightness, contrast and saturation, add/trim or full frame video (beta and zoomed and zoomed video flip.

RasterOps is making the announcement on the basis of its announcements from Apple, Supermac, Technologic, Adonis Systems, and Macromedia/Parsons of a series of announcements from March, April, and May the companies are jointly producing to their users how to do "Videospigot." "Videospigot" is defined by RasterOps as making live video from a camcorder or video-camera recorder (VCR) and making it on a Macintosh hard drive, editing the video clips, creating special effects, and compressing the video into software applications.

RasterOps says its 24STV is priced at \$299. Videospigot users can get that \$299 credit by calling 1-800-441-41-08 or by converting a RasterOps to an external drive, the company said. The offer expires June 30, 1992 and is only available to users who purchased Videospigot boards prior to March 31, 1992.

Contact David Cooley, RasterOps, at 408-440-4200, fax 408-440-4201.

New For Macintosh: Hayes Optima Modern

ATLANTA, GEORGIA, MAY 20 (UPI)—Hayes Microcomputer Products has announced its new sleekly designed Optima Modern edition of its Optima Modern Optima 1000 and 1400 models.

The Optima 140 is a GOTT V 30 modem providing up to 1400 baud-per-second data speed. This version provides for data throughput up to 1411 characters per second, and GOTT V 30 error control for data compression.

The Optima 14 provides V 40 data compression and error control for data throughput up to 1411 characters per second.

Hayes does not publish suggested list prices for its products, but had advanced direct prices for the Optima 14 at approximately \$499 and for the Optima 14 at approximately \$499.

Both models come with a Macintosh-compatible cable and Macintosh for Mac communications software.

Like all Hayes products, the new Optima models come with a two-year limited performance warranty.

Contact David Cooley, Hayes, 404-440-4200, fax 404-440-4201.

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automobile manufacturers, for example, could put all the recommended repair procedures for a specific type vehicle on microcassette or video-tape (and eliminate paper copies of technical information).

Helixware allows technicians to move documents on either a CD-ROM or to a disk later for transfer to a computer where a document search can take place (using the public telephone network) and file-via-remote connections, a company can keep a close eye on site locations and eliminate the documents, and any updates as they come. Receiving necessary repair data can, regulations and other documents can be updated from one location to another location around the globe.

Contact: Northern Telecom, Peach Mallory, 610-704-4210.

Next-generation CD Developed

TOKYO, JAPAN April 1989—Japan, Zeon and Ricoh are jointly marketing a compact disc (CD) made of a new technology which is said to produce more light than any other CD.

The new CD material is called "Superdisc" which is a combination of special alloys. One component part of the disc material consists of a combination of iron, cobalt and nickel in a random arrangement of atoms. The advantage in this material, the companies say, is its durability and hardness, and its resistance to magnetic fields. As a result, it is said to reproduce sound clearer and clearer than ordinary CDs.

The price of the new CD is still much higher than conventional CDs according to a Ricoh spokesman, but the Superdisc technology is priced 10 percent higher than regular CDs at \$10 to \$20 per disk. But Ricoh doesn't consider that they will be well accepted in the music industry.

PC NEWS

Tandon, Zeos Race To Offer New Cyrix 486-Based PCs

MORENO VALLE, CALIFORNIA, April 1989—Tandon and Zeos are marketing turnkey design is going to make it hard for market with 100 compatible personal computers (PCs) that will use the newly announced Cyrix 486 microprocessor to be available in about six weeks. Zeos, however, has announced that its new 486-PCs should be available by the end of April.

The Cyrix 486 processor, the C486SLC, is currently available not only because it is expected to cost half as much as a comparable Intel microprocessor, but also because Intel is heavily and increasingly supporting the introduction of the chip into the market.

Cyrix claims the new 486 chip is compatible with Intel's 386 chip and chip interface, the Intel 386 chip design. Tandon says it will be the first to offer the new 486 chip because its new PC systems have microprocessors based in its compatible configuration, in the current, pre-existing unit (C486) can be easily replaced and a new one put in its place.

Tandon says the new 486 PCs will be available in volume and will provide 10 percent greater performance than Intel's new 486 PCs at half the price of the new IBM system.

Tandon also points out existing customers will be able to upgrade their system to the new 486 PCs.

Zeos says its 486-PCs will compete price-wise directly with other 486-PC systems. Zeos says the 486-based computer will run 3-4 times faster than similarly priced 386-PC systems.

Contact: Royal King Tandon, 909-940-0400 or 1234, Rock Apple, Don, 909-940-0477.

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PORTABLE COLOR

Toshiba Invents World's First TFT-LCD 486 Color Notebook

CHICAGO, ILLINOIS, APR. 2 (ENR)— Toshiba says it has introduced the world's first double-resolution liquid crystal display (TFT-LCD) 486SX color notebook computer.

Called the T4400SC, Toshiba America's Information Systems (TASIS) Computer System Division says the new notebook offers a 68032 microprocessor at 15 megahertz and options for either a 120 megabyte (MB) or 30 MB hard disk drive.

The 15-inch TFT-LCD color display provides video graphics array (VGA) 640 X 480 resolution, a white viewing angle, and is only five times faster with more contrast than standard LCD displays. Toshiba mentions the T4400SC also supports Super VGA (SVGA) color (160 colors) or 640 X 480 from a graphics card (160,128 colors) simultaneously on both the internal and external monitor ports, a feature Toshiba says can be taken advantage of by the user with existing programs.

Toshiba promises its new color notebook is the only notebook to really increase up to color applications when multiple display of scanned color photographs is necessary to make advantage of color in business applications like those used in Microsoft Windows. The

486SX processor at 15 MHz combined with the 370A display is what makes the T4400SC notable.

Toshiba also boasts the T4400SC comes with a full of random access memory (RAM), memory that can be expanded up to 30 MB in 1 MB, 2 MB or 4 MB non-volatile memory modules. The full 30 MB 486SX microprocessor comes with 8 kilobytes (K) of internal static cache and can be upgraded to a 32 Kbit cache, Toshiba says.

The notebook also comes with a 3.5-inch 1 1/2 MB diskette drive and an optional dedicated mode can also be an optional internal mode for second drive, 500K floppy disk or hard medium. The notebook, with 100% Toshiba and the TFT display has the advantage of no distortion in the colors or convergence problems often found in CRT monitor screens.

In summary, Toshiba announced a color portable notebook computer, the T4400SC with TFT. Toshiba says the TFT display has the advantage of no distortion in the colors or convergence problems often found in CRT monitor screens.

Stephen Bell, Manager, IBM and Developer for Toshiba, 80714-702/1100, fax 714-425-2403/700-220-0400.

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Delch Offers New, Portable Multimedia Hardware

MILPITAS, CALIFORNIA, MAR. 19 (ENR)— Delch Computer Systems, known for its highest presentation and fluid dynamic architecture, has announced a new offering general interest multimedia. They include a color multi-media monitor that handles an on-screen program, compression of video signals into video frames for compression and the addition of video compression and playback on both portable computers.

Called the P4100 (Photography and Integrated Multimedia Monitor), the monitor features a compressed color panel that lets an on-screen program be covered on a monitor that the addition of a magnifying lens. The P4100 can display full 16-Megabyte data output from IBM or compatible personal computers (PC) and Macintosh computers, or VHS video, Delch says.

The P4100 will fit in a notebook, Delch adds, the dimensions are 10 inches long, 17 inches wide and only 1.5 inches thick, and it connects to a conventional computer video output port.

Delch is also offering compression for video built into its PC computers. A hardware module, the compressed compression / decompression system, utilizes the JPEG standard algorithm, resulting in video transfer 100 million video and audio compression and storage in the system disk. Delch says the compression

ratio can vary adjustable from 10 up to 100%.

Because the compression ratio is adjustable through software compression and Huffman analysis, the P4100 system can accept video/audio input from a variety of sources, including NTSC, PAL, and CCIR 601, Delch adds.

Delch is also offering a DVI video controller system that the company says can handle signals from industry standard DVI sources and convert them to digital RGB in the VGA format. The controller is capable of driving RGB color or YUV (luminance and chrominance) displays and is backward compatible with VGA, CGA, MDA, and Hercules graphics cards.

The DVI video controller is available for IBM, Unix, and OS/2 operating systems, Delch adds.

The company says it is demonstrating the new products line at trade shows throughout this month, and all the products are available as part of the company's "highlights, portable multimedia presentation."

Milpitas, California-based Delch says it has been designing and manufacturing portable computers since 1987. The company was founded by John Delch, a General Instrument engineer in the development of microprocessor instrumentation.

Contact: Steve Pitt, Delch Computer Systems, 408-657-0000 fax 408-657-0000

Comdex: NCR Rolls Out New Computers, Notebook

CHICAGO, ILLINOIS, APR. 2 (ENR)— AT&T's NCR has introduced a new version of the Silver notebook computer, the 3170. The new machine weighs 5 pounds and features a PCMCIA slot.

It measures 11 inches by 11 inches by 5 inches, approximately 10 times smaller than a desktop model, an 80 megabyte hard drive, 8 megabytes of RAM, and an Intel 486SX2, a chip running at 25 megahertz. The system is the result of a deal announced last year between Japan's AT&T and Marshall of Japan.

NCR has also introduced the System MM, a personal computer using the 486

megahertz Intel 486SX2 processor. The 3230 is PCAT's first machine combining a full chip with the AT (Industry Standard Architecture) design. The computer offers several enhanced systems with Micro Channel Architecture (MCA) bus.

PCAT and the System 3230 is about as efficient with no running multiple applications, 8 megabyte random access memory using Microchannel's Virtual Channel architecture, or who said high-performance storage or graphics capabilities.

The 3230 can be upgraded to a full Channel architecture 3230

Acecat Graphics Tablet

by David Singer

Product: Acecat Graphics Tablet
Manufacturer: Acecat Co. Ltd., 8 Mark Court, Building 4-100, Monterey, CA 93940 Tel: (415) 555-1111 Fax: (415) 555-1111
Requirements: IBM compatible/386/486 compatible computer
Cost: \$1295 MSRP

Overview

This product is clearly a great discovery to a tablet. It delivers the benefits of a standard graphics tablet and the convenience of a mouse. The Acecat is well constructed and is designed to last. Instructions along with the tablet tell of computer hardware necessary for "Mac/Win/Unix" operation. It is a refreshing change from the common mice, trackballs, touch screens and regular CAD-type graphics tablets.

The "Mouse Effect"

The product never releases points to the device as a "mouse effect." It is doubtful that the millions of mice will drop dead due to the appearance of a graphics tablet—but it is likely that this product will be a popular choice for those of us who are just plain bored with pushing a key or two around the desk.

One of the most appealing features of the Acecat is its size (under discussion if

a 10" and weighs 1.55 lb.). The size is attractive because it actually takes up (more or less) the same desktop space as a mouse mat. The weight is attractive because, unlike regular tablets, it is light as a feather and can be moved effortlessly with one hand. This means that moving the whole tablet off the desk and onto your lap (or even placing it under a mouse) takes a minute or so.

A "Mouse" Tablet

The Acecat graphics tablet is a "miniature" graphics tablet which emulates both graphics tablets (MSB 486 graphics tablet) and a standard mouse. In effect, between each tablet, you must use a hardware mouse on the tablet itself. This brings up one small problem with the design if you use the device in MS mouse mode under Windows, you have to release the computer to switch to tablet mode for one click. For example, AutoCAD. This is annoying, but considering the use of this device, acceptable.

The main area of the device is 9" x 9". This may seem very small, but experience is in your right for you will see movement. In mouse mode, this means only a couple of inches to go from



left corner to the lower right. In tablet mode the 9" x 9" active area of the tablet is "extended," that is the upper left corner of the tablet is the upper left corner of the screen.

The Acecat has a resolution of 1600 lines per inch and an accuracy of 0.001". It is also a mouse for graphics tablets. The technology behind it is proprietary. It is compatible with over 800 CAD/CAM and graphics application software programs (list in its literature). The device interface also comes with an ASCII driver for automated applications, an ASCII driver for settings to support 9" x 9"

tablet resolution, a mouse driver for Microsoft mouse emulators, and a Windows driver which allows the tablet settings inside MS Windows 3.1.

The Acecat package includes the tablet, both mouse and tablet pens, cables (RS232 serial) and software. An optional business mouse port, intermediate mouse port, power adapter and instructions that cover use available separately. The device is covered by a one-year warranty.

Summary

Overall, this product offers a refreshing change from a mouse and deserves a close look. It has capabilities beyond those of a generic mouse. It is a fully functional graphics tablet, although not really capable of screen digitizing (first to note), it can perform all the tasks of a "real" graphics tablet.

There are only two points of criticism about this product which deserve mention. One is the position of switching between tablet mode and mouse mode. The other is that the software you need to use it is too limited (in contrast to a regular mouse, connecting cable). These two points are minor, however. This is a great product which merits serious consideration when thinking about a pointing device, it should be thought of as a small deviation in the ubiquitous mouse. ■

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GE Intras Cross-Platform Information Mgt System

WASHINGTON, DC, APR 8 (ENR)—GE Information Services has announced the Intras/Info System 5000, an information management system for Windows, MS-DOS, and Macintosh computers. At the heart of the software is an e-mail system that bridges all three platforms, combined with

information databases such as electronic news clipping services and bulletin board systems.

This is a single cross-platform system intended to provide a basis for secure information sharing and e-mail across all three major platforms.

Through a cluster of four- or six-membered modules, the Intras/Info software will provide large businesses with a common tool interface for everyone working in word and receive e-mail and news distribution.

Proving for single user copies of the Intras software is 3500 per copy and the license fees therefore will operate across a number of different LAN platforms.

Contact: Andy Harrison, GE Information Services, (917-431-0400).

ACCPAC Computer Associates announces new

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Autodesk 11 Windows Extensions & New Autodesk 3D Studio

SAN FRANCISCO, CALIFORNIA, MAY 15 (NR)—Autodesk has announced it has entered the Windows computer aided design (CAD) market and will release a new release of its 3D Studio product.

The AutoCAD Release 11 Extension for Windows is a transitional product available for \$99 to allow AutoCAD 11 users to work in both the DOS and Windows environments. Further, Autodesk says this is just a first step.

*Autodesk believes Microsoft Windows will be the standard PC-CAD operating environment of the mid-1990s," and Rich Connolly, general manager of the AutoCAD Division. "We don't want anything to stand in the way of a

AeroCAD customers enjoy Windows and taking advantage of its benefits immediately, so we're making it easy for DOS AeroCAD customers to begin the transition to Windows."

John Walker, an Autodesk founder and current manager of technology said, "We will continue to develop new releases of AutoCAD for DOS, but the next-generation browser set of AutoCAD will be created by graphical, multi-application environments like Microsoft Windows."

The company also said it is investigating Windows NT and emulated technologies for a future 32-bit version of AutoCAD for Windows.

Ascentek said the ability to move data from one application to another and the multitasking capabilities of Windows make it a better fit for AutoCAD users.

However, the Windows environment is slower and Autodesk says when users want more speed, the IFC environment is the place to go to.

Suggested retail price of AutoCAD Release 11 for IBM and compatible PC computers is \$9,500. More information is available 415/550-0898 or type GO A11EPC on CompuServe.

Autodesk's Multimedia Division also announced Autodesk HD Studio Release 2 for graphics professionals using 386 or 486-based IBM and compatible personal computers (PCs).

The company says after 100 changes, including increases in speed of between 100 and 500 percent and a broad-based quality set of 1644, modeling tools that is one of the finest available.

10 architectural well-thoughts and



Influential visualizations are possible from AutoCAD files with the product's improved DXF file handling capabilities. And a new video postproduction module allows a new environment for combining multiple animations and backgrounds during rendering—an effect file used to replace visual hardware. Autodesk said.

A compact but amply illustrated monograph (CD-ROM) containing over 340 photographs of 22 algae, seaweeds, and animals is included. *Animalia* describes some of the items included on the CD being everything from fishy eating eels to a hermit crab of the Grand Canyon, as well as organisms including 82 varieties of mollusk, 11 different chordata, and 30 types of insect.

The *Antitank* 300 stills received renewed attention as it was a tool used in

The Mitchell Brothers murder trial. An animation created with the product was used by the prosecution to demonstrate to the jury, based on evidence gathered by ballistics experts, how they believed victim Arlie Mitchell was struck by three of the bullets fired by his killer, brother Jim.

will be available this quarter at a suggested list price of \$1995 (U.S. dollars) through authorized Acorned Multimedia Dealers, the company said. For a limited time, current owners of Acorned 3D Studio can upgrade to Release 2 for \$395. More information is available toll free at 1-800-325-2783 or by typing GO ACORN on CompuLink.

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Computer Reseller News/Gallup Vertical Market Poll Results

WASHINGTON, DC, APR. 2 (ENR)—For contractors, desktop computers, and local area network computers (LANs) are the top-selling IT products, with information and manufacturing markets, according to the published results of a Computer Reseller News poll conducted by the Gallup Organization.

Climbing to its sixth, seventh, and ninth positions are notebook computers, file servers, and CD-ROM and hard-disk storage devices. These results come from a survey of material markets value-added resellers (VARs) targeting those two critical markets.

However, when viewing the results it must be remembered that, although some VARs ranked optical storage devices in the top five in frequency of sales of the top 12

products they sell, more than half report including CD-ROM drives with their configurations.

Each group of VARs agrees on some of the products, placing Tumble in the top spot of the list of laptop-oriented computers they prefer to sell, with IBM topping the desktop category.

Interest in storage space is causing a resurgence in tape drives, and the software, with seed processors being new products of growing interest. IBM and Sun are leaders among the "new" IT product manufacturers.

That just scratches the surface of the survey results, which are the basis of a 16-page GEN Benchmark Supplement included with the March 30 issue of *Computer Reseller News*.

MS Intros Japanese Version Of Excel, Word For Windows

REDMOND, WASHINGTON, MAR. 12 (EDN)—Microsoft Corporation has announced that Japanese versions of its Excel spreadsheet program and Microsoft Word for Windows are now shipping. The Japanese versions of the programs are the first Windows-based user processing applications ever marketed in Japan.

According to a news story issued by International Data Corporation, the Japanese personal computer market is expected to grow by an annual rate of 35.6 percent throughout 1991.

A Microsoft spokesman declined to tell Microsoft how many copies of Word for Windows had been sold in Japan, but he did reject "speculative rumors."

Nonetheless, the Microsoft deal is widely expected to stir fights for its products, although it has made no entrance occasionally.

In 1989, Microsoft updated a version of the Multipoint spreadsheet program in Japan. More than the company has delivered 13 other localized versions of its various products in January this year. It also released a Japanese version of Windows 3.0. Development of the localized products, including Excel and Word for Windows, is done at Microsoft's research and development center located in Tokyo, where about 600 employees work.

The Japanese version of Excel has a suggested price of ¥9,000 yen (one yen is \$100), while Word for Windows will sell for \$6,000 yen, one little over \$413.

Contributor Katy Ehrlich, Los Angeles, 304-457-0097

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